

**Commonwealth of Kentucky  
Environmental and Public Protection Cabinet  
Department for Environmental Protection  
Division for Air Quality  
803 Schenkel Lane  
Frankfort, Kentucky 40601  
(502) 573-3382**

**Final**

**AIR QUALITY PERMIT  
Issued under 401 KAR 52:020**

**Permittee Name:** Air Products and Chemicals, Inc.  
**Mailing Address:** 412 North Main Street  
Calvert City, KY 42029

**Source Name:** Air Products and Chemicals, Inc.  
**Mailing Address:** 412 North Main Street  
Calvert City, KY 42029

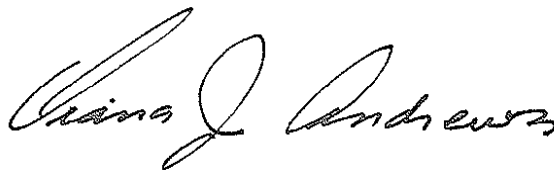
**Source Location:** 412 North Main Street

**Permit:** V-07-009 R1  
**Agency Interest:** 2915  
**Activity:** APE20080001  
**Review Type:** Title V, Operating  
**Source ID:** 21-157-00009

**Regional Office:** Paducah Regional Office  
130 Eagle Nest Drive  
Paducah, KY  
(270) 898-8468

**County:** Marshall

**Application**  
**Complete Date:** January 25, 2008  
**Issuance Date:** October 31, 2007  
**Revision Date:** March 19, 2008  
**Expiration Date:** October 25, 2012



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**John S. Lyons, Director  
Division for Air Quality**

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|          | Permit type             | Log or Activity#                     | Complete Date    | Issuance Date | Summary of Action                                 |
|----------|-------------------------|--------------------------------------|------------------|---------------|---|
| V-07-009 | Initial Issuance        | 50700,<br>APE20040001<br>APE20070001 | April 27, 2007   | 10/31/07      | Initial Title V Permit                            |
| V-07-009 | Administrative Revision | APE20080001                          | January 25, 2008 | 3/19/08       | Transfer of Equipment Ownership/ Title V Revision |

## **SECTION A - PERMIT AUTHORIZATION**

Pursuant to a duly submitted application the Kentucky Division for Air Quality hereby authorizes the operation of the equipment described herein in accordance with the terms and conditions of this permit. This permit has been issued under the provisions of Kentucky Revised Statutes Chapter 224 and regulations promulgated pursuant thereto.

The permittee shall not construct, reconstruct, or modify any affected facilities without first submitting a complete application and receiving a permit for the planned activity from the permitting authority, except as provided in this permit or in 401 KAR 52:020, Title V Permits.

Issuance of this permit does not relieve the permittee from the responsibility of obtaining any other permits, licenses, or approvals required by this Cabinet or any other federal, state, or local agency.

## **SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS**

### **Acetylenics Raw Material Storage Tanks**

- C-29        Diisopropyl Ether (IPE) Storage Tank (FB-2557)**  
Internal Floating Roof Storage Tank  
Capacity: 39,000 gallons  
Constructed: 1996
- C-30        Diisopropyl Ether (IPE) Storage Tank (FB-2558)**  
Internal Floating Roof Storage Tank  
Capacity: 39,000 gallons  
Constructed: 1996
- C-31        Methyl Isobutyl Ketone (MIBK) Storage Tank (FB-2556)**  
Internal Floating Roof Storage Tank  
Capacity: 39,000 gallons  
Constructed: 1996

#### **APPLICABLE REGULATIONS:**

401 KAR 63:002, 40 CFR Part 63 National Emission Standards for Hazardous Air Pollutants, incorporating by reference 40 CFR 63.2430 to 63.2550 (Subpart FFFF), National Emission Standards for Hazardous Air Pollutants: Miscellaneous Organic Chemical Manufacturing. The facility must comply with the requirements for existing sources no later than May 10, 2008.

401 KAR 60:005, 40 CFR Part 60 Standards of Performance for New Stationary Sources, incorporating by reference 40 CFR 60 Subpart Kb, Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced after July 23, 1984.

State-Origin Only Requirements are in Section D for emission units B-63, B-64, C-05, C-29, C-30, C-31, C-09, and C-13.

#### **1.     Operating Limitations:**

- a. The permittee shall comply with the following standards of 40 CFR 60.112b(a)(1):

The owner or operator of each storage vessel either with a design capacity greater than or equal to 151 m<sup>3</sup> containing a VOL that, as stored, has a maximum true vapor pressure equal to or greater than 5.2 kPa but less than 76.6 kPa or with a design capacity greater than or equal to 75 m<sup>3</sup> but less than 151 m<sup>3</sup> containing a VOL that, as stored, has a maximum true vapor pressure equal to or greater than 27.6 kPa but less than 76.6 kPa, shall equip each storage vessel with a fixed roof in combination with an internal floating roof meeting the following specifications:

## **SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS**

### **Acetylenics Raw Material Storage Tanks**

#### **1. Operating Limitations (Continued):**

- i. The internal floating roof shall rest or float on the liquid surface (but not necessarily in complete contact with it) inside a storage vessel that has a fixed roof. The internal floating roof shall be floating on the liquid surface at all times, except during initial fill and during those intervals when the storage vessel is completely emptied or subsequently emptied and refilled. When the roof is resting on the leg supports, the process of filling, emptying, or refilling shall be continuous and shall be accomplished as rapidly as possible.
- ii. Each internal floating roof shall be equipped with one of the following closure devices between the wall of the storage vessel and the edge of the internal floating roof:
  - A. A foam-or liquid-filled seal mounted in contact with the liquid (liquid-mounted seal). A liquid-mounted seal means a foam-or liquid-filled seal mounted in contact with the liquid between the wall of the storage vessel and the floating roof continuously around the circumference of the tank.
  - B. Two seals mounted one above the other so that each forms a continuous closure that completely covers the space between the wall of the storage vessel and the edge of the internal floating roof. The lower seal may be vapor-mounted, but both must be continuous.
  - C. A mechanical shoe seal. A mechanical shoe seal is a metal sheet held vertically against the wall of the storage vessel by springs or weighted levers and is connected by braces to the floating roof. A flexible coated fabric (envelope) spans the annular space between the metal sheet and the floating roof.
- iii. Each opening in a noncontact internal floating roof except for automatic bleeder vents (vacuum breaker vents) and the rim space vents is to provide a projection below the liquid surface.
- iv. Each opening in the internal floating roof except for leg sleeves, automatic bleeder vents, rim space vents, column wells, ladder wells, sample wells, and stub drains is to be equipped with a cover or lid which is to be maintained in a closed position at all times (i.e., no visible gap) except when the device is in actual use. The cover or lid shall be equipped with a gasket. Covers on each access hatch and automatic gauge float well shall be bolted except when they are in use.
- v. Automatic bleeder vents shall be equipped with a gasket and are to be closed at all times when the roof is floating except when the roof is being floated off or is being landed on the roof leg supports.
- vi. Rim space vents shall be equipped with a gasket and are to be set to open only when the internal floating roof is not floating or at the manufacturer's recommended setting.
- vii. Each penetration of the internal floating roof for the purpose of sampling shall be a sample well. The sample well shall have a slit fabric cover that covers at least 90 percent of the opening.

## **SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS**

### **Acetylenics Raw Material Storage Tanks**

**1. Operating Limitations (Continued):**

- viii. Each penetration of the internal floating roof that allows for passage of a column supporting the fixed roof shall have a flexible fabric sleeve seal or a gasketed sliding cover.
- ix. Each penetration of the internal floating roof that allows for passage of a ladder shall have a gasketed sliding cover.

b. See Condition 5.a. of **Section D – Source Emission Limitations and Testing Requirements**. [State Origin only requirement]

**2. Emission Limitations:**

None

**3. Testing Requirements:**

See Condition 5.b. of **Section D – Source Emission Limitations and Testing Requirements**. [State Origin only requirement]

**4. Specific Monitoring Requirements:**

a. The permittee shall comply with the following monitoring requirements of 40 CFR 60.113b(a):

After installing the control equipment required to meet 40 CFR 60.112b(a)(1) (permanently affixed roof and internal floating roof), each owner or operator shall:

- 1. Visually inspect the internal floating roof, the primary seal, and the secondary seal (if one is in service), prior to filling the storage vessel with VOL. If there are holes, tears, or other openings in the primary seal, the secondary seal, or the seal fabric or defects in the internal floating roof, or both, the owner or operator shall repair the items before filling the storage vessel.
- 2. For Vessels equipped with a liquid-mounted or mechanical shoe primary seal, visually inspect the internal floating roof and the primary seal or the secondary seal (if one is in service) through manholes and roof hatches on the fixed roof at least once every 12 months after initial fill. If the internal floating roof is not resting on the surface of the VOL inside the storage vessel, or there is liquid accumulated on the roof, or the seal is detached, or there are holes or tears in the seal fabric, the owner or operator shall repair the items or empty and remove the storage vessel from service within 45 days. If a failure that is detected during inspections required in this paragraph cannot be repaired within 45 days and if the vessel cannot be emptied within 45 days, a 30-day extension may be requested from the Administrator in the inspection report required in 40 CFR 60.115b(a)(3). Such a request for an extension must document that alternate storage capacity is unavailable and specify a schedule of actions the company will take that will assure that the control equipment will be repaired or the vessel will be emptied as soon as possible.

**SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS****Acetylenics Raw Material Storage Tanks****4. Specific Monitoring Requirements (Continued):**

3. For vessels equipped with a double-seal system as specified in 40 CFR 60.112b(a)(1)(ii)(B):
  - i. Visually inspect the vessel as specified in 40 CFR 60.113b(a)(4) at least every 5 years; or
  - ii. Visually inspect the vessel as specified in 40 CFR 60.113b (a)(2).
4. Visually inspect the internal floating roof, the primary seal, the secondary seal (if one is in service), gaskets, slotted membranes and sleeve seals (if any) each time the storage vessel is emptied and degassed. If the internal floating roof has defects, the primary seal has holes, tears, or other openings in the seal or the seal fabric, or the secondary seal has holes, tears, or other openings in the seal or the seal fabric, or the gaskets no longer close off the liquid surfaces from the atmosphere, or the slotted membrane has more than 10 percent open area, the owner or operator shall repair the items as necessary so that none of the conditions specified in this paragraph exist before refilling the storage vessel with VOL. In no event shall inspections conducted in accordance with this provision occur at intervals greater than 10 years in the case of vessels conducting the annual visual inspection as specified in 40 CFR 60.113b(a)(2) and (a)(3(ii) and at intervals no greater than 5 years in the case of vessels specified in 40 CFR 60.113b(a)(3)(i).
5. Notify the Administrator in writing at least 30 days prior to the filling or refilling of each storage vessel for which an inspection is required by 40 CFR 60.113b(a)(1) and (a)(4) to afford the Administrator the opportunity to have an observer present. If the inspection required by 40 CFR 60.113b(a)(4) is not planned and the owner or operator could not have known about the inspection 30 days in advance or refilling the tank, the owner or operator shall notify the Administrator at least 7 days prior to the refilling of the storage vessel. Notification shall be made by telephone immediately followed by written documentation demonstrating why the inspection was unplanned. Alternatively, this notification including the written documentation may be made in writing and sent by express mail so that it is received by the Administrator at least 7 days prior to the refilling.
- b. See Condition 5.c. of **Section D – Source Emission Limitations and Testing Requirements**. [State Origin only requirement]

**5. Specific Recordkeeping Requirements:**

- a. Pursuant to 40 CFR 60.116b(a) and (b), the permittee shall keep readily accessible records showing the dimension of the storage vessel and an analysis showing the capacity of the storage vessel. These records shall be maintained for the life of the vessel.
- b. Pursuant to 40 CFR 60.116b(c), the permittee shall maintain a record of the VOL stored, the period of storage, and the maximum true vapor pressure of that VOL during the respective storage period.

**SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS****Acetylenics Raw Material Storage Tanks****5. Specific Recordkeeping Requirements (Continued)::**

- c. Pursuant to 40 CFR 60.115b(a)(2), the permittee shall keep a record of each inspection performed as required by 60.113b(a)(1), (a)(2), (a)(3), and (a)(4). Each record shall identify the storage vessel on which the inspection was performed and shall contain the date the vessel was inspected and the observed condition of each component of the control equipment (seals, internal floating roof, and fittings).
- d. See Condition 5.d. of **Section D – Source Emission Limitations and Testing Requirements**. [State Origin only requirement]

**6. Specific Reporting Requirements:**

- a. Pursuant to 40 CFR 60.115b(a)(3), if any of the conditions described in 60.113b(a)(2) are detected during the annual visual inspection required by 60.113b(a)(2), a report shall be furnished to the Division within 30 days of the inspection. Each report shall identify the storage vessel, the nature of the defects, and the date the storage vessel was emptied or the nature of and date the repair was made.
- b. Pursuant to 40 CFR 60.115b(a)(4), after each inspection required by 60.113b(a)(3) that finds holes or tears in the seal or seal fabric, or defects in the internal floating roof, or other control equipment defects listed in 60.113b(a)(3)(ii), a report shall be furnished to the Division within 30 days of the inspection. The report shall identify the storage vessel and the reason it did not meet the specifications of 40 CFR 60.112b(a)(1) or 60.113b(a)(3) and list each repair made.
- c. See Condition 5.e. of **Section D – Source Emission Limitations and Testing Requirements**. [State Origin only requirement]

**7. Specific Control Equipment Operating Conditions:**

None

**8. Alternate Operating Scenarios:**

None

**9. Compliance Certification Requirements:**

- a. If required by 40 CFR 63.2520, the permittee shall submit a pre-compliance report at least six (6) months prior to the compliance date specified in the rule. The report must contain the information specified in 40 CFR 63.2520(c), as applicable. [40 CFR 63.2520(a) and 40 CFR 63 Subpart FFFF, Table 11]
- b. If the emission unit is subject to the provisions of 40 CFR 63 Subpart FFFF on the compliance date specified in the rule, then the permittee must comply with the requirements of 40 CFR 63 Subpart FFFF no later than the compliance date specified in the rule. [40 CFR 63.2445(b)]



## **SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS**

### **Acetylenics Production**

- A-05      Reactor Purge Vents to Acetylene Recovery System (DA-2304/DA2303)**  
Acetylene recovery system for recovering materials from reactor purge vents, consisting of Absorber DA-2304, Stripper DA-2303, and a condenser  
Controls:      None  
Constructed: 1973
- A-08      Slop Tank (FA-2403)**  
**Solvent Still Pot (DA-2401)**  
Process Tanks  
Constructed: 1958  
Controls:      2-Stage Vent Condenser (Brine Cooled, Water Cooled)  
Constructed: 1989
- A-18      Old Product Still Column (DA-2402) with Vacuum Steam Jets**  
**Still Pot (FA-2402)**  
Batch Distillation Column and Still Pot  
Constructed: 1962
- A-20      Acetylenics (Semi-crude) Tank (FA-2404)**  
Vertical Fixed Roof Tank  
Capacity: 4,136 gallons  
Constructed: 1980
- A-24      Mixed Organic Solvents Containing Acetylene (MOSCA) Intermediate**  
**Storage Tank (FA-2411)**  
Vertical Fixed Roof Storage Tank  
Capacity: 1,175 gallons  
Constructed: 1957
- A-30      Acetylenics Blend Tank (FB-2521)**  
Process Tank  
Capacity: 6,000 gallons  
Constructed: 1979
- A-42      Mixed Organic Solvents Containing Acetylene (MOSCA) Intermediate**  
**Storage Tank (FB-2552)**  
Vertical Fixed Roof Storage Tank  
Capacity: 17,061 gallons  
Constructed: 1994

**SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS****Acetylenics Production**

- A-43      Mixed Organic Solvents Containing Acetylene (MOSCA) Intermediate Storage Tank (FB-2551)**  
Vertical Fixed Roof Storage Tank  
Capacity: 17,061 gallons  
Constructed: 1994
- A-52      Mixed Organic Solvents Containing Acetylene (MOSCA) Intermediate Storage Tank (FB-2553)**  
Vertical Fixed Roof Storage Tank  
Capacity: 17,061 gallons  
Constructed: 1994
- B-63      Slurry Mix Tank (FA-2110)**  
Process Tank  
Capacity: 750 gallons  
Constructed: 1985  
Controls:      Vent Condenser (Brine Cooled)  
Constructed: 1985
- B-64      Slurry Storage Tank (FA-2111)**  
Storage Tank  
Capacity: 15,000 gallons  
Constructed: 1985
- B-67      Acetylenics Still Bottoms Tank (FA-2417)**  
Storage Tank  
Capacity: 6,000 gallons  
Constructed: 1986
- B-72      Organics Recovery Tank (FB-2108)**  
Wastewater Organics Recovery Tank  
Capacity: 10,000 gallons  
Constructed: 1984
- C-05      Slurry Buffer Tank (FA-2115)**  
Storage Tank  
Capacity: 15,000 gallons  
Constructed: 1990
- C-09      Acetylenics (Semi-crude) Tank (FA-2422)**  
Vertical Fixed Roof Tank  
Capacity: 10,575 gallons  
Constructed: 1992

## **SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS**

### **Acetylenics Production**

**C-13**            **New Product Still Column (DA-2403) with Vacuum Steam Jets Still Charge Pot (FA-2423)**  
Batch Distillation Column and Charge Pot  
Constructed: 1992

**C-20**            **Acetylenics Still Bottoms Tank (FA-2425)**  
Still Bottoms Storage Tank  
Capacity: 6,000 gallons  
Constructed: 1994

**F-08**            **Acetylenics Fugitive Emissions**  
Fugitive emission components (pumps, valves, connectors, etc.)

### **APPLICABLE REGULATIONS:**

401 KAR 63:002, 40 CFR Part 63 National Emission Standards for Hazardous Air Pollutants, incorporating by reference 40 CFR 63.2430 to 63.2550 (Subpart FFFF), National Emission Standards for Hazardous Air Pollutants: Miscellaneous Organic Chemical Manufacturing. The facility must comply with the requirements for existing sources no later than May 10, 2008.

State-Origin Only Requirements are in Section D for emission units B-63, B-64, C-05, C-29, C-30, C-31, C-09, and C-13.

### **NON-APPLICABLE REGULATIONS:**

401 KAR 60:005, 40 CFR Part 60 Standards of Performance for New Stationary Sources, incorporating by reference 40 CFR 60 Subpart Kb, Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced after July 23, 1984. Subpart Kb does not apply to organic liquid storage vessels with a capacity less than 75 m<sup>3</sup> (19,800 gallons). Subpart Kb does not apply to process tanks.

401 KAR 60:005, 40 CFR Part 60 Standards of Performance for New Stationary Sources, incorporating by reference 40 CFR 60, Subpart NNN, Standards of Performance for Volatile Organic Compound (VOC) Emissions From Synthetic Organic Chemical Manufacturing Industry (SOCMI) Distillation Operations which commenced construction, modification, or reconstruction after December 30, 1983. Subpart NNN does not apply because the process units do not produce as a product, co-product, by-product or intermediate a chemical listed in 40 CFR 60.677.

**SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS****Acetylenics Production****NON-APPLICABLE REGULATIONS (Continued):**

401 KAR 60:005, 40 CFR Part 60 Standards of Performance for New Stationary Sources, incorporating by reference 40 CFR 60, Subpart RRR, Standards of Performance for VOC Emissions from Synthetic Organic Chemical Manufacturing Industry (SOCMI) Reactor Processes for Which Construction, Reconstruction, or Modification Commenced After June 29, 1990. Subpart RRR does not apply because the process units do not produce as a product, co-product, by-product or intermediate a chemical listed in 40 CFR 60.707.

401 KAR 60:005, 40 CFR Part 60 Standards of Performance for New Stationary Sources, incorporating by reference 40 CFR 60, Subpart VV, Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemical Manufacturing Industry for Which Construction or Modification Commenced After January 5, 1981. Subpart VV does not apply because the process units do not produce as an intermediate or final product a chemical listed in 40 CFR 60.489.

1. **Operating Limitations:**  
See Condition 5.a. of **Section D – Source Emission Limitations and Testing Requirements.** [State Origin only requirement]
2. **Emission Limitations:**  
None
3. **Testing Requirements:**  
See Condition 5.b. of **Section D – Source Emission Limitations and Testing Requirements.** [State Origin only requirement]
4. **Specific Monitoring Requirements:**  
See Condition 5.c. of **Section D – Source Emission Limitations and Testing Requirements.** [State Origin only requirement]
5. **Specific Recordkeeping Requirements:**  
See Condition 5.d. of **Section D – Source Emission Limitations and Testing Requirements.** [State Origin only requirement]
6. **Specific Reporting Requirements:**  
See Condition 5.e. of **Section D – Source Emission Limitations and Testing Requirements.** [State Origin only requirement]
7. **Specific Control Equipment Operating Conditions:**  
None
8. **Alternate Operating Scenarios:**  
None

## **SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS**

### **Acetylenics Production**

#### **9. Compliance Certification Requirements:**

- a. If required by 40 CFR 63.2520, the permittee shall submit a pre-compliance report at least six (6) months prior to the compliance date specified in the rule. The report must contain the information specified in 40 CFR 63.2520(c), as applicable. [40 CFR 63.2520(a) and 40 CFR 63 Subpart FFFF, Table 11]
- b. If the emission unit is subject to the provisions of 40 CFR 63 Subpart FFFF on the compliance date specified in the rule, then the permittee must comply with the requirements of 40 CFR 63 Subpart FFFF no later than the compliance date specified in the rule. [40 CFR 63.2445(b)]

**SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS****Acetylenics Flakers**

**A-81 Glycol Flaker (PA-2401)**  
Flaker Drum and Ventilation Hood  
Capacity: 1,000 lb/hr  
Constructed: 1975  
Controls: Cyclone  
Constructed: 1975

**A-82 Caustic (KOH) Flaker (PA-2110)**  
Flaker Drum and Ventilation Hood  
Capacity: 6,500 lb/hr  
Constructed: 1984  
Controls: Rotoclone  
Constructed: 1984

**APPLICABLE REGULATIONS:**

401 KAR 59:010, New Process Operations commenced on or after July 2, 1975.

**1. Operating Limitations:**

None

**2. Emission Limitations:**

- a. Particulate matter emissions from each stack shall not exceed the calculated allowable rate as determined by the following equation. [401 KAR 59:010 Section 3(2)]

$$\begin{aligned} E_{\text{Allowable}} &= 2.34 \text{ lb/hr for } P \text{ less than or equal to } 0.5 \text{ ton/hr} \\ &= 3.59 * P^{0.62} \text{ for } P \text{ greater than } 0.5 \text{ ton/hr but less than or equal to } 30 \text{ ton/hr} \\ &= 17.31 * P^{0.16} \text{ for } P \text{ greater than } 30 \text{ ton/hr} \end{aligned}$$

where

$E_{\text{Allowable}}$  = Allowable rate of particulate emissions (lbs/hr)

$P$  = Process weight rate (tons/hr), equal to the total process weight for a period that covers a complete batch operation (tons/batch) divided by the hours of actual process operation during the batch operation (hrs/batch)

**SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS****Acetylenics Flakers**Compliance Demonstration Method:

Calculate emissions of particulate matter based on the following emission factors and control efficiencies:

| Emission Point | Maximum Processing Rate (ton/hr) | Emission Factor (lb/ton) | Control Efficiency (%) |
|----------------|----------------------------------|--------------------------|------------------------|
| A-81           | 0.5                              | 5.0                      | 80                     |
| A-82           | 3.25                             | 7.86                     | 98                     |

and based on the following formula:

$$PM_t \text{ emissions (lbs/hr)} = (\text{processing rate}) \times (\text{emission factor}) \times (1 - \text{control efficiency})$$

Where  $PM_t$  = Total Particulate Matter

- b. Visible emissions shall not equal or exceed 20% opacity on a 6-minute average basis, except as specified below. [401 KAR 59:010 Section 3(1)(a)]  
The opacity standard does not apply during periods of startup and shutdown. [401 KAR 50:055 Section 2(4)]

Compliance Demonstration Method:

Weekly visual observations as specified in **4. Specific Monitoring Requirements**, and **5. Specific Record Keeping Requirements**.

**3. Testing Requirements:**

None

**4. Specific Monitoring Requirements:**

The permittee shall perform qualitative visual observations of the cyclone and rotoclone stacks on a weekly basis and maintain a log of the observations. Observations are not required if the equipment is not operated during the week. If visible emissions are observed, then:

- The permittee shall correct the problem within three hours of the initial observation (as indicated by another visual observation showing no visible emissions), or
- The permittee shall perform an EPA Method 9 test within three hours of the initial observation.

## **SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS**

### **Acetylenics Flakers**

**5. Specific Record Keeping Requirements:**

- a. Retain records of maintenance performed on the cyclone and rotoclone.
- b. Retain records of the results of the weekly visual observations. The records shall include the date and time of the observation, and whether any visible emissions were observed. If a visual observation was not required because the equipment was not operating that week, then that shall also be recorded.  
If visible emissions are observed, then the following additional records shall be retained:
  - i. The actions taken to correct the problem, and the time and result of the subsequent visual observation showing no visible emissions, or
  - ii. The time and results of the Reference Method 9 opacity test.

**6. Specific Reporting Requirements:**

None

**7. Specific Control Equipment Operating Conditions:**

None

**8. Alternate Operating Scenarios:**

None

**9. Compliance Certification Requirements:**

None



## **SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS**

### **Utilities – Vents from Westlake to Air Products Thermal Oxidizers**

**B-27            Vents from Westlake to Air Products Thermal Oxidizers**

**B-39            Capacity:**        12 million scf/yr waste gas from Westlake

Note:        This emission unit consists of waste gas from Westlake vented to the Air Products thermal oxidizers. Emissions from the Airflex #3 Stripper vented to the thermal oxidizers are accounted for at Emission Unit 52.

Controls:        North VCM Thermal Oxidizer with Packed Bed Scrubber (B-27)  
                         or  
                         South VCM Thermal Oxidizer with Packed Bed Scrubber (B-39)  
                         Constructed: 1978

#### **APPLICABLE REGULATIONS:**

401 KAR 57:002, 40 CFR Part 61 National Emission Standards for Hazardous Air Pollutants, incorporating by reference 40 CFR 61 Subpart F, National Emission Standard for Vinyl Chloride.

**1.        Operating Limitations:**

None

**2.        Emission Limitations:**

The permittee shall comply with the following requirement for vinyl chloride formation and purification in 40 CFR 61.63(a): the concentration of vinyl chloride in each exhaust gas stream from any equipment used in vinyl chloride formation and/or purification is not to exceed 10 ppm (average for 3-hour period), except as provided in 40 CFR 61.65(a). This requirement does not preclude combining of exhaust gas streams provided the combined stream is ducted through a control system from which the concentration of vinyl chloride in the exhaust gases does not exceed 10 ppm, or equivalent as provided in 40 CFR 61.66. This requirement does not apply to equipment that has been opened, is out of operation, and met the requirement in 40 CFR 61.65(b)(6)(i) before being opened.

Compliance Demonstration Method:

See **4. Specific Monitoring Requirements** below.

**3.        Testing Requirements:**

- a. Emissions testing required by 40 CFR 61 Subpart F, Section 61.67 has already been performed.
- b. Pursuant to 401 KAR 50:045, Section 1, performance testing using the Reference Methods specified in 401 KAR 50:015 shall be conducted if required by the Division.

## **SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS**

### **Utilities – Vents from Westlake to Air Products Thermal Oxidizers**

#### **4. Specific Monitoring Requirements:**

The permittee shall comply with the following requirements of 40 CFR 61.68:

- a. A vinyl chloride monitoring system is to be used to monitor on a continuous basis the emissions from the sources for which emission limits are prescribed in 40 CFR 61.63(a) and for any control system to which fugitive emissions are required to be ducted in 40 CFR 61.65(b)(1)(ii), and (b)(2), (b)(5), (b)(6)(ii), and (b)(9)(ii).
- b. The vinyl chloride monitoring system(s) used to meet the requirement in 40 CFR 61.68(a) is to be a device which obtains representative samples from one or more applicable emission points on a continuous sequential basis and analyzes the samples with gas chromatography or, if the owner or operator assumes that all hydrocarbons measured are vinyl chloride, with infrared spectrophotometry, flame ion detection, or an alternative method. The vinyl chloride monitoring system used to meet the requirements in 40 CFR 61.65(b)(8)(i) may be used to meet the requirements of 40 CFR 61.68.
- c. A daily span check is to be conducted for each vinyl chloride monitoring system used. For all of the emission sources listed in 40 CFR 61.68(a), except the one for which an emission limit is prescribed in 40 CFR 61.62(b), the daily span check is to be conducted with a concentration of vinyl chloride equal to 10 ppm. For the emission source for which an emission limit is prescribed in 40 CFR 61.62(b), the daily span check is to be conducted with a concentration of vinyl chloride which is determined to be equivalent to the emission limit for that source based on the emission test required by 40 CFR 61.67. The calibration is to be done with either:
  - (1) A calibration gas mixture prepared from the gases specified in Sections 7.2.1 and 7.2.2 of Method 106 and in accordance with Section 10.1 of Method 106, or
  - (2) A calibration gas cylinder standard containing the appropriate concentration of vinyl chloride. The gas composition of the calibration gas cylinder standard is to have been certified by the manufacturer. The manufacturer must have recommended a maximum shelf life for each cylinder so that the concentration does not change greater than  $\pm 5$  percent from the certified value. The date of gas cylinder preparation, certified vinyl chloride concentration and recommended maximum shelf life must have been affixed to the cylinder before shipment from the manufacturer to the buyer. If a gas chromatograph is used as the vinyl chloride monitoring system, these gas mixtures may be directly used to prepare a chromatograph calibration curve as described in Sections 8.1 and 9.2 of Method 106. The requirements in Sections 7.2.3.1 and 7.2.3.2 of Method 106 for certification of cylinder standards and for establishment and verification of calibration standards are to be followed.

**SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS****Utilities – Vents from Westlake to Air Products Thermal Oxidizers****5. Specific Recordkeeping Requirements:**

- a. The permittee shall comply with the following requirements of 40 CFR 61.68(d) through (f):
  - (1) When exhaust gas stream(s) from the process equipment listed above are emitted to the atmosphere without passing through the thermal oxidizer and associated vinyl chloride continuous emission monitoring system, the vinyl chloride content of the emissions shall be calculated (in units of 3-hour average ppm) by best practical engineering judgment based on the discharge duration and known vinyl chloride concentrations in the affected equipment as determined in accordance with 40 CFR 61.67(h) or other acceptable method.
  - (2) For each 3-hour period, the vinyl chloride content of emissions measured by the VC continuous emission monitor (CEM) shall be averaged (weighted according to the proportions of time that emissions were continuously monitored and that emissions bypassed the continuous monitor) for purposes of reporting excess emissions under 40 CFR 61.70(c)(1).
  - (3) For each vinyl chloride emissions to the atmosphere determined in accordance with item (a)(2) above to be in excess of 10 ppm, the permittee shall record the identity of the source(s), the date, time, and duration of the excess emission, the cause of the excess emission, and the approximate total vinyl chloride loss during the excess emission, and the method used for determining the vinyl chloride loss.
- b. The permittee shall maintain a record of emissions measured in accordance with 40 CFR 61.68. [40 CFR 61.71(a)(3)]

**6. Specific Reporting Requirements:**

- a. The permittee shall comply with the following requirements of 40 CFR 61.70(a):
  - (1) The owner or operator of any source to which 40 CFR 61 Subpart F applies shall submit to the Administrator on March 15, June 15, September 15, and December 15 of each year a report in writing containing the information required by this section. The first report is to be submitted following the first full 3-month reporting period after the initial report is submitted.
  - (2) In the case of an existing source, the approved reporting schedule shall be used. In addition, quarterly reports shall be submitted exactly 3 months following the current reporting dates.
- b. The owner or operator shall include in the report a record of the vinyl chloride content of emissions for each 3-hour period during which average emissions are in excess of the emission limits in 40 CFR 61.63(a), or to which fugitive emissions are required to be ducted in 40 CFR 61.65(b)(1)(ii), (b)(2), (b)(5), (b)(6)(ii), or (b)(9)(ii). The number of 3-hour periods for which average emissions were determined during the reporting period shall be reported. If emissions in excess of the emission limits are not detected, the report shall contain a statement that no excess emissions have been detected. The emissions are to be determined in accordance with 40 CFR 61.68(e).

**SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS**

**Utilities – Vents from Westlake to Air Products Thermal Oxidizers**

7. **Specific Control Equipment Operating Conditions:**  
See 4. Specific Monitoring Requirements and Section F.
8. **Alternate Operating Scenarios:**  
None
9. **Compliance Certification Requirements:**  
None

## **SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS**

### **Utilities – Waste Water Treatment**

**F-23            Waste Water Treatment Plant**  
Conventional Recycled Activated Sludge Unit  
Capacity: 1.8 million gal/day wastewater (nominal)  
Constructed: 1977

#### **APPLICABLE REGULATIONS:**

401 KAR 63:002, 40 CFR Part 63 National Emission Standards for Hazardous Air Pollutants, incorporating by reference 40 CFR 63.2430 to 63.2550 (Subpart FFFF), National Emission Standards for Hazardous Air Pollutants: Miscellaneous Organic Chemical Manufacturing. The facility must comply with the requirements for existing sources no later than May 10, 2008.

**1.     Operating Limitations:**

None

**2.     Emission Limitations:**

None

**3.     Testing Requirements:**

None

**4.     Specific Monitoring Requirements:**

None

**5.     Specific Recordkeeping Requirements:**

None

**6.     Specific Reporting Requirements:**

None

**7.     Specific Control Equipment Operating Conditions:**

None

**8.     Alternate Operating Scenarios:**

None

**9.     Compliance Certification Requirements:**

- a. If required by 40 CFR 63.2520, the permittee shall submit a pre-compliance report at least six (6) months prior to the compliance date specified in the rule. The report must contain the information specified in 40 CFR 63.2520(c), as applicable. [40 CFR 63.2520(a) and 40 CFR 63 Subpart FFFF, Table 11]

## **SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS**

### **Utilities – Waste Water Treatment**

**9. Compliance Certification Requirements (Continued):**

- b. If the emission unit is subject to the provisions of 40 CFR 63 Subpart FFFF on the compliance date specified in the rule, then the permittee must comply with the requirements of 40 CFR 63 Subpart FFFF no later than the compliance date specified in the rule. [40 CFR 63.2445(b)]

## **SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS**

### **Utilities – Cooling Tower**

**M-06**            **#1 Cooling Tower**  
Induced Draft Counter Flow  
Capacity: 4,000 gal/min  
Constructed: 1977

#### **APPLICABLE REGULATIONS:**

401 KAR 63:010, Fugitive Emissions

401 KAR 63:002, 40 CFR Part 63 National Emission Standards for Hazardous Air Pollutants, incorporating by reference 40 CFR 63.2430 to 63.2550 (Subpart FFFF), National Emission Standards for Hazardous Air Pollutants: Miscellaneous Organic Chemical Manufacturing. The facility must comply with the requirements for existing sources no later than May 10, 2008.

#### **NON-APPLICABLE REGULATIONS:**

401 KAR 63:002, 40 CFR Part 63 National Emission Standards for Hazardous Air Pollutants, incorporating by reference 40 CFR 63.400 to 63.407 (Subpart Q), National Emission Standards for Hazardous Air Pollutants for Industrial Process Cooling Towers, does not apply, since the permittee does not use chromium-based water treatment chemicals in the cooling tower

#### **1.     Operating Limitations:**

- a. The permittee shall not use chromium-based water treatment chemicals in any cooling tower. [To preclude applicability of 40 CFR 63 Subpart Q]

##### Compliance Demonstration Method:

See **5. Specific Recordkeeping Requirements** below.

- b. Reasonable precautions shall be taken to prevent particulate matter from becoming airborne. [401 KAR 63:010 Section 3(1)]

##### Compliance Demonstration Method:

All reasonable measures shall be taken to prevent particulate matter from becoming airborne at all times. These measures shall include, but are not limited to: operating process equipment in accordance with manufacturer's specifications, cleaning up and appropriately disposing of any spilled material, and proper handling and storage of water treatment chemicals.

#### **2.     Emission Limitations:**

None

#### **3.     Testing Requirements:**

None

## **SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS**

### **Utilities – Cooling Tower**

**4. Specific Monitoring Requirements:**

None

**5. Specific Recordkeeping Requirements:**

The permittee shall maintain records of water treatment chemicals purchases or other information to identify the composition of the products used.

**6. Specific Reporting Requirements:**

None

**7. Specific Control Equipment Operating Conditions:**

None

**8. Alternate Operating Scenarios:**

None

**9. Compliance Certification Requirements:**

- a. If required by 40 CFR 63.2520, the permittee shall submit a pre-compliance report at least six (6) months prior to the compliance date specified in the rule. The report must contain the information specified in 40 CFR 63.2520(c), as applicable. [40 CFR 63.2520(a) and 40 CFR 63 Subpart FFFF, Table 11]
- b. If the emission unit is subject to the provisions of 40 CFR 63 Subpart FFFF on the compliance date specified in the rule, then the permittee must comply with the requirements of 40 CFR 63 Subpart FFFF no later than the compliance date specified in the rule. [40 CFR 63.2445(b)]



**SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS****Cogeneration – Rental Boiler**

|                  |  |
|------------------|--|
| <b>RB1</b>       | <b>Rental Boiler #1</b>                      |
|                  | Indirect Heat Exchanger                      |
| Fuel:            | Natural Gas only                             |
| Rated Capacity:  | Less than or equal to 95 mmBtu/hr heat input |
| Constructed:     | Prior to January 13, 2003                    |
| <u>Controls:</u> | Low NO <sub>x</sub> Burner                   |

Note: Listing of this emission unit authorizes a generic rental boiler to be brought on site and used as needed. Any boiler brought on site and operated under authorization of this emission unit shall be natural gas fired, equipped with low NO<sub>x</sub> burners, and rated at less than or equal to 95 mmBtu /hr heat input capacity. Only one such boiler shall be allowed at any time.

Note: Pursuant to 401 KAR 52:001 Section 1(51)(b)(7) and 40 CFR 60 Subpart A Section 60.14(e)(6), the relocation or change in ownership of an affected facility is not considered a modification.

**APPLICABLE REGULATIONS:**

401 KAR 59:005, General provisions

401 KAR 59:015, New indirect heat exchangers

401 KAR 60:005, 40 CFR Part 60 standards of performance for new stationary sources, incorporating by reference 40 CFR 60.40c to 60.48c (Subpart Dc), Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units

Any boiler that remains at the site for more than 180 consecutive days is not considered a temporary boiler as defined at 40 CFR 63.7575, and is therefore not exempt from 40 CFR 63 Subpart DDDDD. (Pursuant to 40 CFR 63.7575, any boiler that replaces a temporary boiler at a location and is intended to perform the same or similar function will be included in calculating the consecutive time period).

For boilers that do not meet the definition of a temporary boiler in 40 CFR 63.7575:

40 CFR 63 Subpart DDDDD, National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters. No requirements of this rule apply. The rental boiler(s) was commenced prior to January 13, 2003 and burns only gaseous fuels. The boiler is therefore classified as an existing large gaseous fuel unit. Per 40 CFR 63.7506(b)(1), existing large gaseous fuel units are subject to the initial notification requirements in 40 CFR 63.9(b). They are not subject to any other requirements of 40 CFR Subpart DDDDD or 40 CFR 63 Subpart A. The notifications required by 40 CFR 60.7 as specified below shall be deemed to meet the 40 CFR 63.9(b) notification requirements.

**SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS****Cogeneration – Rental Boiler****NON-APPLICABLE REGULATIONS:**

Any boiler that is designed to, and is capable of, being carried or moved to from one location to another, and that remains at the site for less than or equal to 180 consecutive days is considered a temporary boiler as defined at 40 CFR 63.7575. Temporary boilers are exempt from 40 CFR 63 Subpart DDDDD. (Pursuant to 40 CFR 63.7575, any boiler that replaces a temporary boiler at a location and is intended to perform the same or similar function will be included in calculating the consecutive time period).

**1. Operating Limitations:**

- a. The permittee shall only fire natural gas in the rental boiler. [State only requirement, from permit VS-03-004 Revision 1]
- b. The total heat input of the two Heat Recovery Steam Generators (HRSGs) and the rental boiler while in operation will be limited to 620 mmBtu/hr (HHV). [State only requirement, from permit VS-03-004 Revision 1]

Compliance Demonstration Method:

See the **Recordkeeping**, and **Reporting Requirements**, below.

**2. Emission Limitations:**

- a. Particulate matter emissions shall not exceed of 0.10 lb/mmBtu actual heat input, based on a 3-hour average. [401 KAR 59:015, Section 4 (1)(b)]
- b. Sulfur dioxide emissions shall not exceed 0.8 lb/mmBtu actual heat input, based on a 3-hour average, and based on the total heat input of natural gas burned. [401 KAR 59:015, Section 5 (1)(b) and (3)]
- c. The opacity of visible emissions shall not exceed 20 percent [401 KAR 59:015, Section 4 (2)] except as provided below:
  - (1) Pursuant to 401 KAR 59:015, Section 4(2)(b), a maximum of 40% opacity is permissible for not more than 6 consecutive minutes in any 60 consecutive minute period during cleaning the fire box or blowing soot.
  - (2) Pursuant to 401 KAR 59:015, Section 4(2)(c), the opacity standard does not apply during building a new fire for the period required to bring the boiler up to operating conditions, provided the method used is that recommended by the manufacturer and the time does not exceed the manufacturer's recommendations.
  - (3) Pursuant to 401 KAR 50:055, Section 2(4), the opacity standard does not apply during periods of startup and shutdown.

## **SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS**

### **Cogeneration – Rental Boiler**

#### Compliance Demonstration Methods:

##### Mass Emission Limits:

The boiler shall be deemed in compliance with the applicable mass emission standards (lb/mmBtu) for particulate matter and sulfur dioxide while natural gas is the only fuel used.

##### Opacity Limit:

The boiler shall be deemed in compliance with the applicable visible emission standard while natural gas is the only fuel used.

#### **3. Testing Requirements:**

Pursuant to Regulations 401 KAR 59:005, Section 2(2) and 401 KAR 50:045, Section 1, performance testing using the Reference Methods specified in 401 KAR 50:015 shall be conducted if required by the Division.

#### **4. Specific Monitoring Requirements:**

The permittee shall determine the heating value of natural gas once within 180 days of issuance of the final permit V-07-009. The analysis may be performed by the permittee, a service contractor retained by the permittee, the fuel vendor, or any other qualified agency.

#### **5. Specific Recordkeeping Requirements:**

- a. The owner or operator of an affected facility that only burns very low sulfur fuel oil or other liquid or gaseous fuels with potential sulfur dioxide emissions rate of 140 ng/J (0.32 lb/mmBtu) heat input or less shall record and maintain records of the fuels combusted during each calendar month. [40 CFR 60.48c(g)]
- b. The permittee shall maintain records of the occurrence and duration of any startup, shutdown, or malfunction in the operation of the boiler. [401 KAR 59:005, Section 3(2) and 40 CFR 60.7(b)]
- c. The permittee shall maintain a file of all measurements, including performance testing measurements if performance tests are required; adjustments and maintenance performance on this system or device; and all other required information recorded in a permanent form suitable for inspection. All records required under this section shall be maintained by the permittee for a period of 5 years following the date of such record. [401 KAR 59:005, Section 3(4); 40 CFR 60.48c(i); and Condition 2 of **Section F** of this permit]
- d. The permittee shall keep records of the periods of time when the two Heat Recovery Steam Generators (HRSGs) and the rental boiler are in operation at the same time.

## **SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS**

### **Cogeneration – Rental Boiler**

**6. Specific Reporting Requirements:**

- a. The permittee shall submit notification of the date of construction, anticipated startup, and actual startup. This notification shall include: [40 CFR 60.48c(a)]
  - (1) The design heat input capacity of the boiler. [40 CFR 60.48c(a)(1)]
  - (2) The annual capacity factor at which the permittee anticipates operating the boiler based on firing natural gas. [40 CFR 60.48c(a)(3)]
- b. The permittee shall furnish the division with written notification as follows: [401 KAR 59:005, Section 3(1)(a)-(d) and 40 CFR 60.7(a)]
  - (1) A notification of the date that construction, reconstruction, or modification of the boiler is commenced, postmarked no later than thirty (30) days after such date.
  - (2) A notification of the anticipated date of initial startup of the boiler postmarked not more than sixty (60) days nor less than thirty (30) days prior to such date (or as soon as practicable in the case of unforeseen events).
  - (3) A notification of the actual date of initial startup of the boiler postmarked within fifteen (15) days after such date.
  - (4) A notification of any physical or operational changes to the boiler, which may increase the emission rate of any air pollutant to which a standard applies. This notice shall be postmarked sixty (60) days or as soon as practicable before the change is commenced and shall include information describing the precise nature of the change, present and proposed emission control systems, productive capacity of the facility before and after the change, and the expected completion date of the change. The Division may request additional relevant information subsequent to this notice.
- c. The permittee shall notify the Division if the boiler will remain on site more than 180 days.

**7. Specific Control Equipment Operating Conditions:**

None

**8. Alternate Operating Scenarios:**

None

**9. Compliance Certification Requirements:**

None

## **SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS**

### **Cogeneration – Gas Turbine**

#### **D-1 26 MW Gas Turbine**

Venting through Bypass Stacks A and B, or one or both HRSGs.

Make: General Electric

Model: LM-2500+

Fuel: Natural Gas supplied by pipeline

Rated Capacity: 276.6 mmBtu/hr lower heating value (LHV)

Constructed: March 22, 1999

Controls: Dry Low NO<sub>x</sub> Combuster

#### **APPLICABLE REGULATIONS:**

401 KAR 51:160, NO<sub>x</sub> requirements for large utility and industrial boilers. See **Section K – NO<sub>x</sub> Budget**.

401 KAR 60:005, 40 CFR Part 60 standards of performance for new stationary sources, incorporating by reference 40 CFR 60.330 to 60.335 (Subpart GG), Standards of Performance for Stationary Gas Turbines

401 KAR 63:002, 40 CFR Part 63 National Emission Standards for Hazardous Air Pollutants, incorporating by reference 40 CFR 63.6080 to 63.6175 (Subpart YYYY), National Emission Standards for Hazardous Air Pollutants for Stationary Combustion Turbines. However, existing affected sources (i.e.: commenced before January 14, 2003) do not have to comply with any requirements from this subpart.

#### **NON-APPLICABLE REGULATIONS:**

401 KAR 51:017, Prevention of significant deterioration of air quality.

40 CFR 63 Subpart DDDDD, National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters. As specified at 40 CFR 63.7491(m), an affected facility that is specifically listed as an affected source in another standard under 40 CFR Part 63 is not subject to 40 CFR 63 Subpart DDDDD.

#### **1. Operating Limitations:**

None

#### **2. Emission Limitations:**

- a. On and after the date on which the initial performance test is required to be completed, the owner or operator shall not cause to be discharged into the atmosphere from the turbine any gases which contain nitrogen oxides in excess of 0.01095 percent by volume at 15% oxygen and on a dry basis (109.5 ppmvd at 15% O<sub>2</sub>). [40 CFR 60.332(a)(1) and (b)]

## SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS

### Cogeneration – Gas Turbine

#### Compliance Demonstration Method:

The owner or operator shall determine compliance by computing the nitrogen oxides emissions ( $NO_x$ ) in percent by volume at 15% oxygen and on a dry basis using the following equation: [40 CFR 60.335(b)(1) and (c)(1)]

$$NO_x = (NO_{xo}) * \left( \frac{P_r}{P_o} \right)^{0.5} * e^{19(H_o - 0.00633)} * \left( \frac{288^\circ K}{T_a} \right)^{1.53}$$

where:

$NO_x$  = emissions of  $NO_x$  at 15%  $O_2$  and ISO standard ambient conditions, volume percent.

$P_r$  = reference combustor inlet absolute pressure at 101.3 kilopascals ambient pressure, mmHg.

$e$  = transcendental constant, 2.718.

and  $NO_{xo}$ ,  $P_o$ ,  $H_o$ ,  $T_a$  are defined as follows:

For continuous compliance, based on a 1-hour averaging time, by converting the continuous monitoring data into units of the standard (ppmvd at 15%  $O_2$ ) for each hour of CEMS operation after the initial performance test:

$NO_{xo} = C_{T,d,adj}$  = observed hourly average adjusted  $NO_x$  concentration, ppmvd at 15%  $O_2$ , as determined by summing the adjusted  $NO_x$  concentrations of each sample and dividing by the number of samples in the hour.

$C_{T,d,adj,i}$  = adjusted  $NO_x$  concentration of each sample, ppmvd at 15%  $O_2$ , as determined by the following equation:

$$C_{T,d,adj,i} = \sum_{i=1}^p \left( \frac{C_{T,i}}{\%CO_{2,T,i}} * \frac{5.9}{0.209 * \frac{F_d}{F_c}} \right)$$

$C_{T,i}$  = observed  $NO_x$  concentration of each sample, ppmv wet, as determined by the pollutant concentration monitor in the  $NO_x$ -diluent CEMS.

$\%CO_{2,T,i}$  = observed wet (w) diluent concentration of each sample, %, as determined by the  $CO_2$ -diluent gas monitor in the  $NO_x$ -diluent CEMS.

$F_d$  = dry flue gas volume fuel factor, scf/mmBtu, as determined by Section 3.1 or Section 3.2 of Method 19 of 40 CFR 60, Appendix A.

$F_c$  =  $CO_2$  volume fuel factor, scf/mmBtu, as determined by Section 3.1 or Section 3.2 of Method 19 of 40 CFR 60, Appendix A.

$P_o$  = calculated observed combustor inlet absolute pressure for the hour, mmHg.

$P_a$  = observed ambient absolute pressure, mmHg, from most recent measurement.

## SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS

### Cogeneration – Gas Turbine

#### 2. Emission Limitations (Continued):

$H_o$  = observed humidity of ambient air, g H<sub>2</sub>O/g air, from most recent measurement.

$T_a$  = observed ambient temperature, K, from most recent measurement.

- b. On and after the date on which the initial performance test is required to be completed, the owner or operator shall not burn in any stationary gas turbine any fuel which contains sulfur in excess of 0.8 percent by weight. [40 CFR 60.333(b)]

#### Compliance Demonstration Method:

See the **Specific Monitoring, Recordkeeping, and Reporting Requirements**, below.

#### 3. Testing Requirements:

- a. Pursuant to 401 KAR 50:045, Section 1, performance testing using the Reference Methods specified in 401 KAR 50:015 shall be conducted if required by the Division.
- b. The initial performance test requirements of 40 CFR 63.335 were satisfied by the testing performed on May 2 – 4, 2000.

#### 4. Specific Monitoring Requirements:

- a. The owner or operator shall install, calibrate, maintain, and operate a continuous emission monitoring system (CEMS) (consisting of a NO<sub>x</sub> pollutant concentration monitor and a CO<sub>2</sub> diluent gas monitor) with an automated data acquisition and handling system for measuring and recording NO<sub>x</sub> concentration and CO<sub>2</sub> concentration discharged to the atmosphere, in accordance with the applicable requirements of 40 CFR 60.13, Performance Specifications 2 and 3 of 40 CFR 60 Appendix B, 40 CFR 60 Appendix F, and 40 CFR 75 Appendices A and B in order to determine continuous compliance with the nitrogen oxide emission limitation using **Compliance Demonstration Method for Emission Limitation 2.a.**, above. [40 CFR 60.334(c) and U.S.EPA Region IV Determination Letter dated February 1, 1999]
- b. The owner or operator is not required to monitor the nitrogen content of the natural gas fired in the turbine. [40 CFR 60.334(h)(4) and U.S.EPA Region IV Determination Letter dated February 1, 1999]
- c. The owner or operator shall monitor quarterly the sulfur content of the natural gas fired in the turbine using the Gas Producers Association (GPA) method for Determination of Hydrogen Sulfide and Mercaptan Sulfur in Natural Gas, or any approved method specified in 40 CFR 60.335 (d). The analysis may be performed by the owner or operator, a service contractor retained by the owner or operator, the fuel vendor, or any other qualified agency. The fuel sample shall be taken downstream of the sulfur injection. [40 CFR 60.334(i)(3) and U.S.EPA Region IV Determination Letter dated February 1, 1999]

**SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS****Cogeneration – Gas Turbine****4. Specific Monitoring Requirements**

- d. The owner or operator shall take annual measurements of the ambient day conditions  $P_a$ ,  $H_o$ , and  $T_a$ , as defined in the Compliance Demonstration Method above, in August of each calendar year, and use the most recent measurements for compliance calculations. [401 KAR 52:020, Section 10]

**5. Specific Recordkeeping Requirements:**

- a. The owner or operator shall maintain records of the following information in a permanent form suitable for inspection for a period of 5 years from the generation of such record. [40 CFR 60.7 (b); 40 CFR 60.7 (f); and **Section F.2.** of this permit]
  - (1) All measurements, including continuous monitoring system and performance testing measurements;
  - (2) All continuous monitoring system performance evaluations;
  - (3) All continuous monitoring system calibration checks;
  - (4) Continuous monitoring system adjustments and maintenance performed;
  - (5) The occurrence and duration of any startup, shutdown, or malfunction in the operation of the turbine; and
  - (6) Any periods during which the continuous monitoring system is inoperative.
- b. The owner or operator shall maintain records of the quarterly monitoring analysis of the sulfur content of the natural gas fired in the turbine. [401 KAR 52:020, Section 10]

**6. Specific Reporting Requirements:**

- a. The owner or operator shall furnish the Division the written notifications required in 40 CFR 60.7 (a).
- b. The owner or operator shall submit an excess emissions and monitoring systems performance report containing the information required in 40 CFR 60.7(c) and/or a summary report form in accordance with 40 CFR 60.7(d) to the Division on a quarterly basis, if excess emissions are determined, or else semiannually. All reports shall be postmarked by the 30th day following the end of each reporting period. [40 CFR 60.7(c); 40 CFR 60.7(d)]
  - (1) Periods of excess emissions of nitrogen oxides are any 1-hour period during which the average nitrogen oxides emission rate exceeds the standard. [40 CFR 60.334(c) and U.S.EPA Region IV Determination Letter dated February 1, 1999]
  - (2) Periods of excess emissions of sulfur dioxide are any quarterly period during which the sulfur content of the fuel being fired in the gas turbine exceeds 0.8 percent. [40 CFR 60.334(i)(3) and U.S.EPA Region IV Determination Letter dated February 1, 1999]

**7. Specific Control Equipment Operating Conditions:**

None



**SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS**

**Cogeneration – Gas Turbine**

8. Alternate Operating Scenarios:  
None

9. Compliance Certification Requirements:  
None



## SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS

### Cogeneration – Heat Recovery Steam Generators (HRSGs)

#### 1. Operating Limitations:

- a. See Emission Unit RB1 (Rental Boiler) **Operating Limitation 1.b.** for periods when both the Rental Boiler and HRSGs are in operation.
- b. In order to maintain Low Mass Emissions (LME) unit status and eligibility for LME compliance demonstration methodology, the HRSGs shall fire only pipeline quality natural gas. [40 CFR 75.19(a)(1)(i), and U.S. EPA approval letter to use low mass emission (LME) methodology dated May 1, 2003]

#### Compliance Demonstration Method:

See the **Specific Monitoring, Recordkeeping, and Reporting Requirements**, below.

- c. See Condition 6.a. of **Section D – Source Emission Limitations and Testing Requirements** [To preclude applicability of 401 KAR 59:016 and 40 CFR 60 Subpart Da].

#### 2. Emission Limitations:

- a. On and after the date on which the initial performance test is completed or is required to be completed, whichever date comes first, the owner or operator shall not cause to be discharged into the atmosphere from either HRSG any gases that contain nitrogen oxides (expressed as NO<sub>2</sub>) in excess of 86 ng/J (0.20 lb/mmBtu) heat input. Only emissions resulting from combustion of natural gas in the HRSGs are subject to this emission standard. The nitrogen oxides standard applies at all times including periods of startup, shutdown, and malfunction. [40 CFR 60.40b(i); 40 CFR 60.44b(h), and 40 CFR 60.44b(l)(1)]
- b. In order to maintain Low Mass Emissions (LME) unit status and eligibility for LME compliance demonstration methodology, each HRSG shall emit no more than 50 tons of NO<sub>x</sub> per ozone season (i.e.: from May 1<sup>st</sup> to September 30<sup>th</sup> of each year). [40 CFR 75.19(a)(1)(i)(A)(3), and U.S. EPA approval letter to use low mass emission (LME) methodology dated May 1, 2003]

#### Compliance Demonstration Method:

The owner or operator shall determine compliance for each HRSG by using the continuous monitoring systems and calculating the emission rate of nitrogen oxides from each HRSG. [40 CFR 60.46b (c), and (e)]

For continuous compliance, by calculating a 30-day rolling average emission rate. A new 30-day rolling average emission rate shall be calculated each steam generating unit operating day as the average of all of the turbine exhaust-fired and fresh air-fired hourly nitrogen oxides emission data for the preceding 30 steam generating unit operating days. [40 CFR 60.44B(i), and 40 CFR 60.46B(e)(3)]

## SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS

### Cogeneration – Heat Recovery Steam Generators (HRSGs)

The turbine exhaust-fired hourly nitrogen oxides emission data shall be calculated in accordance with the following equations:

$$E_{NO_x, H} = \frac{M_{NO_x, MS} - M_{NO_x, T-MS}}{\frac{Q_{g, H} * GCV_{ng}}{10^6} * t_{MS}}$$

where  $E_{NO_x, H}$ ,  $M_{NO_x, MS}$ ,  $M_{NO_x, T-MS}$ ,  $Q_{g, H}$ , and  $t_{MS}$  are defined as follows:

$E_{NO_x, H}$  = hourly average  $NO_x$  emission rate, lb/mmBtu, as determined by the equation above and using the following values:

$M_{NO_x, MS}$  = hourly average  $NO_x$  mass emissions from the Main Stack, lb, as determined by the following equation:

$$M_{NO_x, MS} = K * C_{w, MS} * Q_{w, MS} * t_{MS}$$

$M_{NO_x, T-MS}$  = hourly average  $NO_x$  mass emissions from the Turbine to the Main Stack, lb, as determined by the following equation:

$$M_{NO_x, T-MS} = K * C_{w, T} * Q_{w, T-MS} * t_T$$

$Q_{w, T-MS}$  = wet volumetric flowrate from the Turbine through the HRSG to the Main Stack for the hour, %, as determined by the following equation:

$$Q_{w, T-MS} = (Q_{w, MS} * \frac{\% CO_{2w, MS}}{100} - \frac{Q_{g, H} * GCV_{ng}}{10^6} * F_c) * \frac{100}{\% CO_{2w, T}}$$

where:

$K$  =  $1.194 \times 10^{-7}$  (lb/dscf)/(ppm  $NO_x$ )

$C_{w, MS}$  = hourly average  $NO_x$  concentration in the Main Stack, ppm wet, as determined by summing the  $NO_x$  concentrations of each sample in the Main Stack, as determined by the pollutant concentration monitor in the Main Stack  $NO_x$ -diluent CEMS, and dividing by the number of samples in the Main Stack for the hour.

$\% CO_{2w, MS}$  = hourly average wet  $CO_2$  concentration in the Main Stack, %, as determined by summing the wet  $CO_2$  concentrations of each sample in the Main Stack, as determined by the  $CO_2$ -diluent gas monitor in the Main Stack  $NO_x$ -diluent CEMS, and dividing by the number of samples in the Main Stack for the hour.

## SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS

### Cogeneration – Heat Recovery Steam Generators (HRSGs)

#### 2. Emission Limitations (Continued):

$Q_{w,MS}$  = hourly average wet volumetric flowrate in the Main Stack, scfh, as determined by summing the wet volumetric flowrate of each sample in the Main Stack, as determined by the Main Stack flow monitor, and dividing by the number of samples in the Main Stack for the hour.

$t_{MS}$  = Main Stack CEMS time of operation for the hour.

$Q_{g,H}$  = fuel flow to HRSG for the hour, 100 scfh, as determined by the fuel flowmeter and standardized using procedures in 40 CFR 75, Appendix F, Section 6.

$GCV_{ng}$  = Gross calorific value of natural gas combusted, Btu/100 scf, as determined by most recent fuel sampling

$C_{w,T}$  = hourly average  $NO_x$  concentration in the turbine, ppm wet, as determined by summing the  $NO_x$  concentrations of each sample in the turbine, as determined by the pollutant concentration monitor in the turbine  $NO_x$ -diluent CEMS, and dividing by the number of samples in the Main Stack for the hour.

$\%CO_{2w,T}$  = hourly average wet  $CO_2$  concentration in the turbine, %, as determined by summing the  $NO_x$  concentration of each sample in the turbine, as determined by the  $CO_2$ -diluent gas monitor in the turbine  $NO_x$ -diluent CEMS, and dividing by the number of samples in the Main Stack for the hour.

$F_c$  =  $CO_2$  volume fuel factor, scf  $CO_2$ /mmBtu, as determined by Section 3.3.5 or Section 3.3.6 of 40 CFR 75, Appendix F.

$t_T$  = Turbine CEMS time of operation for the hour, hours

#### 3. Testing Requirements:

- a. Pursuant to 401 KAR 59:005, Section 2(2) and 401 KAR 50:045, Section 1, performance testing using the Reference Methods specified in 401 KAR 50:015 shall be conducted if required by the Division.
- b. The initial performance testing requirement of 40 CFR 60.8 has been satisfied by the testing performed on May 2 – 4, 2000.

#### 4. Specific Monitoring Requirements:

- a. The owner or operator shall install, calibrate, maintain, and operate continuous monitoring systems (consisting of  $NO_x$  pollutant concentration monitors and  $CO_2$  diluent gas monitors with the automated data acquisition and handling system) for measuring and recording nitrogen oxides emissions and carbon dioxide discharged to the atmosphere from each HRSG in order to determine continuous compliance for each HRSG with the nitrogen oxide emission limitation using the **Compliance Demonstration Method**. [40 CFR 60.48b(b)(1)]

**SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS****Cogeneration – Heat Recovery Steam Generators (HRSGs)****4. Specific Monitoring Requirements (Continued):**

- (1) The continuous monitoring systems required above shall be operated and data recorded during all periods of operation of the affected facility except for continuous monitoring system breakdowns and repairs. Data is recorded during calibration checks, and zero and span adjustments. [40 CFR 60.48b(c)]
- (2) The 1-hour average nitrogen oxides emission rates measured by the continuous monitoring systems shall be expressed in ng/J or lb/million Btu heat input and shall be used to calculate the average nitrogen oxide emission rates. The 1-hour averages shall be calculated using the data points required under 40 CFR 60.13(h). At least 2 data points must be used to calculate each 1-hour average. [40 CFR 60.48b(d)]
- (3) The procedures under 40 CFR 60.13 shall be used for installation, evaluation, and operation of the continuous monitoring systems. The span value shall be 500 ppm or an alternative lower value. [40 CFR 60.48b(e)(2), and U.S. EPA approval letter to use low mass emission (LME) methodology dated May 1, 2003]
- (4) When nitrogen oxides emission data are not obtained because of continuous monitoring systems breakdowns, repairs, calibration checks and zero and span adjustments, emission data will be obtained by using standby monitoring systems, Method 7, Method 7A, or other approved reference methods to provide emission data for a minimum of 75 percent of the operating hours in each steam generating unit operating day, in at least 22 out of 30 successive steam generating unit operating days. [40 CFR 60.48b(f)]
- b. The owner or operator shall install, calibrate, maintain, and operate continuous flow monitors for measuring and recording the flue gas flow through each HRSG Main Stack while turbine exhaust-firing in accordance with Performance Specification 6 of Appendix B of 40 CFR 60. [U.S. EPA approval letter to use low mass emission (LME) methodology dated May 1, 2003]
- c. The owner or operator shall install, calibrate, maintain, and operate continuous fuel flow metering systems for measuring and recording the rate of fuel flowing to each HRSG in accordance with the applicable requirements of Section 2.1 of Appendix D of 40 CFR 75.
- d. See Condition 6.b. of **Section D – Source Emission Limitations and Testing Requirements** [To preclude applicability of 401 KAR 59:016 and 40 CFR 60 Subpart Da].

**5. Specific Recordkeeping Requirements:**

The owner or operator shall maintain records of the following information for a period of 5 years following the date of such record: [40 CFR 60.49b(o); and Condition 2 of **Section F** of this permit]

- a. The owner or operator shall record and maintain records of the amounts of each fuel combusted while turbine exhaust-firing in each HRSG during each day that the HRSG is operated turbine exhaust-fired. [40 CFR 60.49b(d)]

## **SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS**

### **Cogeneration – Heat Recovery Steam Generators (HRSGs)**

#### **5. Specific Recordkeeping Requirements (Continued):**

- b. The owner or operator shall record and maintain records of the amounts of each fuel combusted while fresh air-firing in each HRSG during each day that the HRSG is operated fresh air-fired. [40 CFR 60.49b(d)]
- c. The owner or operator shall maintain records of the turbine exhaust-firing operating hours and the fresh air-firing operating hours for each HRSG. [401 KAR 52:020, Section 10]
- d. The owner or operator shall calculate the annual capacity factor for natural gas for each calendar quarter. The annual capacity factor is determined on a 12-month rolling average basis with a new annual capacity factor calculated at the end of each calendar month. [40 CFR 60.49b(d)]
- e. The owner or operator shall maintain the following records for each steam generating unit operating day. [40 CFR 60.49b(g)(1) – (10)]
  - (1) Calendar date.
  - (2) The average hourly nitrogen oxides emission rates (expressed as NO<sub>2</sub>) (ng/J or lb/million Btu heat input) measured or predicted.
  - (3) The 30-day average nitrogen oxides emission rates (ng/J or lb/million Btu heat input) calculated at the end of each steam generating unit operating day from the measured or predicted hourly nitrogen oxide emission rates for the preceding 30 steam generating unit operating days.
  - (4) Identification of the steam generating unit operating days when the calculated 30-day average nitrogen oxides emission rates are in excess of the nitrogen oxides emissions standards, with the reasons for such excess emissions as well as a description of corrective actions taken.
  - (5) Identification of the steam generating unit operating days for which pollutant data have not been obtained, including reasons for not obtaining sufficient data and a description of corrective actions taken.
  - (6) Identification of the times when emission data have been excluded from the calculation of average emission rates and the reasons for excluding data.
  - (7) Identification of “F” factor used for calculations, method of determination, and type of fuel combusted.
  - (8) Identification of the times when the pollutant concentration exceeded full span of the continuous monitoring system.
  - (9) Description of any modifications to the continuous monitoring system that could affect the ability of the continuous monitoring system to comply with Performance Specification 2 or 3.
  - (10) Results of daily CEMS drift tests and quarterly accuracy assessments as required under appendix F, Procedure 1.
- f. See Condition 6.c. of **Section D – Source Emission Limitations and Testing Requirements** [To preclude applicability of 401 KAR 59:016 and 40 CFR 60 Subpart Da].

**SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS****Cogeneration – Heat Recovery Steam Generators (HRSGs)****6. Specific Reporting Requirements:**

- a. The owner or operator shall submit to the Division the results of the certification tests for the flow monitors and fuel flowmeters. [401 KAR 52:020, Section 10]
- b. The owner or operator shall calculate emission factors for turbine exhaust-firing and fresh air-firing operations. [401 KAR 52:020, Section 10]
  - (1) The emission factor for turbine exhaust-firing operation shall be calculated from continuous monitoring data and fuel usage rates during the initial performance test. A request to update the KEIS shall be submitted with the initial performance test results.
  - (2) The emission factor for fresh air-firing operation shall be calculated from continuous monitoring system data and fuel usage rates for all hours of fresh air-firing operation during the first calendar year in which each HRSG is operated fresh air-fired. A request to update the KEIS shall be submitted with the response to the next KEIS emission report.
- c. The owner or operator shall submit excess emission reports for any calendar quarter during which there are excess emissions from a HRSG. If there are no excess emissions during the calendar quarter, the owner or operator shall submit a report semiannually stating that no excess emissions occurred during the semiannual reporting period. Periods of excess emissions of nitrogen oxides are defined as any calculated 30-day rolling average nitrogen oxides emission rate, as determined by the Compliance Demonstrations Method, which exceeds the nitrogen oxides standard. [40 CFR 60.49b(h)]
- d. The owner or operator shall submit written or electronic quarterly reports containing the information recorded under 40 CFR 60.49b(g). The format of each quarterly electronic report shall be coordinated with the Division. The written reports shall be postmarked by the 30th day following the end of each calendar quarter. The electronic reports shall be submitted no later than 30 days after the end of the calendar quarter and shall be accompanied by a certification statement from the owner or operator, indicating whether compliance with the emission standard and minimum data requirements was achieved during the reporting period. Before submitting reports in the electronic format, the owner or operator shall coordinate with the Division to obtain an agreement to submit reports in this alternative format. [40 CFR 60.49b(i); 40 CFR 60.49b(v)]

**7. Specific Control Equipment Operating Conditions:**

None

**8. Alternate Operating Scenarios:**

None



## **SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS**

### **Cogeneration – Heat Recovery Steam Generators (HRSGs)**

**9. Compliance Certification Requirements:**

40 CFR 63 Subpart DDDDD, National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters was vacated and remanded by U.S. Court of Appeals on July 30, 2007. The facility will be required to perform a case-by-case MACT analysis, if notified to do so.

**SECTION C - INSIGNIFICANT ACTIVITIES**

The following listed activities have been determined to be insignificant activities for this source pursuant to 401 KAR 52:020, Section 6. While these activities are designated as insignificant, the permittee must comply with the applicable regulation and some minimal level of periodic monitoring may be necessary.

| <u>Emission Point ID</u>   | <u>Equip. No.</u> | <u>Description</u>                | <u>Generally Applicable Regulation</u> |
|----------------------------|-------------------|-----------------------------------|--|
| <b><u>Acetylenics:</u></b> |                   |                                   |  |
| 13                         | --                | Drum Warming Oven                 | None                                   |
| A-06                       | FA-2304           | DMF Storage Tank                  | None                                   |
| A-10                       | PA-2101A          | KOH "A" Pot Burners (2)           | None                                   |
| A-11                       | PA-2101B          | KOH "B" Pot Burners (2)           | None                                   |
| A-13                       | --                | KOH Pots Atmospheric Vent         | None                                   |
| A-19                       | --                | KOH Evaporator Jet Tank           | None                                   |
| A-22                       | FA-2405           | Old PS Rundown Tank               | None                                   |
| A-23                       | FA-2406           | Old PS Rundown Tank               | None                                   |
| A-25                       | FA-2412           | Old PS Rundown Tank               | None                                   |
| A-26                       | FA-2303           | Chemical Sump Tank                | None                                   |
| A-27                       | FB-2101           | KOH Tank                          | None                                   |
| A-28                       | FB-2102           | KOH Tank                          | None                                   |
| A-33                       | FB-2520           | Ethylene Glycol Tank (3,300 gal)  | None                                   |
| A-37                       | FB-2502           | Acetone Storage Tank              | None                                   |
| A-38                       | FB-2504           | S-104 Storage Tank                | None                                   |
| A-39                       | FB-2503           | Acetone Storage Tank              | None                                   |
| A-40                       | FB-2506           | S-104 Storage Tank                | None                                   |
| A-41                       | FB-2555           | Acetone Storage Tank              | None                                   |
| A-44                       | FB-2518           | Methyl Butynol Intermediates Tank | None                                   |
| A-45                       | FB-2554           | S-104 Storage Tank                | None                                   |
| A-49                       | FB-2515           | MOSCA Reaction Feed Tank          | None                                   |
| A-50                       | FB-2516           | MOSCA Reaction Feed Tank          | None                                   |
| A-51                       | FB-2517           | MOSCA Reaction Feed Tank          | None                                   |

**SECTION C - INSIGNIFICANT ACTIVITIES**

| <b><u>Emission Point ID</u></b> | <b><u>Equip. No.</u></b> | <b><u>Description</u></b>  | <b><u>Generally Applicable Regulation</u></b> |
|---------------------------------|--------------------------|--|---|
| A-53                            | FB-2522                  | Ethylene Glycol Tank (9,500 gal)                                   | None  |
| B-92                            | FA-2418                  | Old PS Rundown Tank  | None  |
| C-10                            | FA-2419                  | New PS Rundown Tank #1   | None  |
| C-11                            | FA-2420                  | New PS Rundown Tank  | None  |
| C-12                            | FA-2421                  | New PS Rundown Tank  | None  |
| C-14                            | --                       | Drumming S-104 PA from Blend Tank                                  | None  |
| C-21                            | --                       | Trailer Loading  | None  |
| C-32                            | PA-2101C                 | KOH "C" Pot Burners (2)  | None  |
| --                              | BA-2401                  | Dowtherm Heater  | None  |
| --                              | --                       | Acetylenics Blending - Fugitives from Warehouse                    | None  |
| <b><u>Utilities:</u></b>        |                          |  |   |
| A-56                            | FB-0001                  | Fuel Oil Tank – removed from service                               | None  |
| B-05                            | FA-0404                  | Lime Silo for WWT Pretreatment Plant – removed from service        | 401 KAR 59:010                                |
| B-06                            | FA-0410                  | WWT Aqua Ammonia Tank  | None  |
| M-09                            | FA-0411                  | WWT Phosphoric Acid Tank   | None  |
| --                              | FA-0424                  | WWT Sulfuric Acid Tank   | None  |
| --                              | FA-0801 - 0802           | Diesel Fire Water Tanks  | None  |
| GP-01<br>GP-02                  | GD-8709 - 8710           | Diesel Fire Water Pumps  | None  |
| <b><u>Cogeneration:</u></b>     |                          |  |   |
| --                              |                          | Water softening system brine silo unloading vent                   | 401 KAR 59:010                                |
| --                              |                          | Water treatment chemicals unloading, storage, and use              | None  |
| --                              |                          | Cooling water chemicals unloading, storage, and use                | None  |
| --                              |                          | Natural gas odorant (methyl mercaptan) unloading, storage, and use | None  |

**SECTION C - INSIGNIFICANT ACTIVITIES**

| <b><u>Emission<br/>Point ID</u></b> | <b><u>Equip. No.</u></b> | <b><u>Description</u></b>               | <b><u>Generally Applicable<br/>Regulation</u></b> |
|-------------------------------------|--------------------------|---|---|
| <b><u>Facility-<br/>Wide:</u></b>   |                          |   |   |
| --                                  |                          | Lube oil storage and use                | None  |
| --                                  |                          | Plant maintenance and repair activities | None  |

**SECTION D - SOURCE EMISSION LIMITATIONS AND TESTING REQUIREMENTS**

1. As required by Section 1b of the *Cabinet Provisions and Procedures for Issuing Title V Permits* incorporated by reference in 401 KAR 52:020, Section 26; compliance with annual emissions and processing limitations contained in this permit, shall be based on emissions and processing rates for any twelve (12) consecutive months.
2. NO<sub>x</sub>, PM, SO<sub>2</sub>, VOC, and HAP emissions, measured by applicable reference methods, or an equivalent or alternative method specified in 40 C.F.R. Chapter I, or by a test method specified in the state implementation plan shall not exceed the respective limitations specified herein.

3. **SOURCE WIDE:**

**Emission Limitations:**

No owner or operator shall allow any affected facility to emit potentially hazardous matter or toxic substances in such quantities or duration as to be harmful to the health and welfare of humans, animals and plants. [401 KAR 63:020, Section 3]

**Compliance Demonstration:**

Compliance was demonstrated by an air dispersion modeling analysis and risk assessment for the following pollutants: Vinyl Acetate Monomer (VAM); Methyl Isobutyl Ketone (MIBK); Methanol (MeOH); Isopropyl Ether (IPE); and Acetaldehyde. The Division may request modeling for other air toxics and/or hazardous air pollutants emitted by the source at any time.

4. **ACETYLENICS PLANT:**  
**(STATE-ORIGIN ONLY REQUIREMENTS)**

- a. **Operating Limitations:**

A source in existence on January 19, 1999 which was issued a permit pursuant to 401 KAR 50:035 with conditions based on 401 KAR 63:021 or 401 KAR 63:022 shall continue to comply with all conditions based on 401 KAR 63:021 or 401 KAR 63:022 unless it can demonstrate that a condition is no longer necessary to protect human health and the environment. [401 KAR 63:021, Section 1]

**Compliance Demonstration Method:**

- a. For compliance with 401 KAR 63:021 and pursuant to Permits C-90-084, C-91-178 (Revised), S-96-132 (Revised), pumps, compressors, pressure relief devices, sampling connection systems, open-ended valves or lines, valves, and flanges or other connectors that contains or contacts a process fluid that is at least 10 percent VOC (or other chemical as specified below) by weight, and that are located within the boundaries of the following process equipment groups, shall comply with the Leak Detection and Repair Program (LDAR) detailed below:

## SECTION D - SOURCE EMISSION LIMITATIONS AND TESTING REQUIREMENTS

| Process Equipment Area                        | Included Emission Units  | Description   |
|---|--|---|
| Acetylenics Plant<br>KOH / IPE Slurry<br>Area | B-63<br>B-64<br>C-05   | Tanks FA-2110, FA-2111, FA-2115 and associated equipment in isopropyl ether service, either in its pure or slurried form, through the slurry tanks  |
| Acetylenics Plant<br>Raw Material<br>Storage  | C-29<br>C-30<br>C-31   | Methyl isobutyl ketone (MIBK) storage Tank FB-2556 and associated fugitive components in MIBK service. Isopropyl ether storage Tanks FB-2557 and FB-2558 and associated fugitive components in isopropyl ether service. |
| Acetylenics Plant<br>New Distillation<br>Area | C-09<br>C-10 (Ins. Act.)<br>C-11 (Ins. Act.)<br>C-12 (Ins. Act.)<br>C-13 | Column FA-2423, Tanks FA-2419, 2420, 2421, and FA-2422 and associated process tanks and fugitive components in VOC service.   |

Compliance will be demonstrated as follows in Compliance Demonstration Method conditions b. through ccc., and by the **Testing, Monitoring, Recordkeeping, and Reporting Requirements** that follow.

### Pumps – Light Liquid Service: [40 CFR 60.482-2]

- b. (1) Each pump in light liquid service shall be monitored monthly to detect leaks by the methods specified in **Testing Requirement** condition (2), except as provided in **Compliance Demonstration Method** condition e – g.
  - (2) Each pump in light liquid service shall be checked by visual inspection each calendar week for indications of liquids dripping from the pump seal.
- c. (1) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected.
  - (2) If there are indications of liquids dripping from the pump seal, a leak is detected.
- d. (1) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in **Compliance Demonstration Method** condition aa – ee.
  - (2) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.
- e. Each pump equipped with a dual mechanical seal system that includes a barrier fluid system is exempt from the requirements of **Compliance Demonstration Method** condition b, *provided* the following requirements are met:
  - (1) Each dual mechanical seal system is—
    - i. Operated with the barrier fluid at a pressure that is at all times greater than the pump stuffing box pressure; or
    - ii. Equipment with a barrier fluid degassing reservoir that is routed to a process or fuel gas system or connected by a closed vent system to a control device that complies with the requirements of 40 CFR 60.482-10; or

**SECTION D - SOURCE EMISSION LIMITATIONS AND TESTING REQUIREMENTS**Compliance Demonstration Method (Continued):

- iii. Equipped with a system that purges the barrier fluid into a process stream with zero VOC emissions to the atmosphere.
- (2) The barrier fluid system is in heavy liquid service or is not in VOC service.
- (3) Each barrier fluid system is equipped with a sensor that will detect failure of the seal system, the barrier fluid system, or both.
- (4) Each pump is checked by visual inspection, each calendar week, for indications of liquids dripping from the pump seals.
- (5) i. Each sensor as described in **Compliance Demonstration Method** condition **e(3)** is checked daily or is equipped with an audible alarm, and
  - ii. The owner or operator determines, based on design considerations and operating experience, a criterion that indicates failure of the seal system, the barrier fluid system, or both.
- (6) i. If there are indications of liquids dripping from the pump seal or the sensor indicates failure of the seal system, the barrier fluid system, or both based on the criterion determined in **Compliance Demonstration Method** condition **e(5)ii**, a leak is detected.
  - ii. When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in **Compliance Demonstration Method** conditions **aa – ee**.
  - iii. A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.
- f. Any pump that is designated, as described in **Specific Recordkeeping Requirement** condition **(3)(ii)**, for no detectable emission, as indicated by an instrument reading of less than 500 ppm above background, is exempt from the requirements of **Compliance Demonstration Method** conditions **b**, **d**, and **e** if the pump:
  - (1) Has no externally actuated shaft penetrating the pump housing,
  - (2) Is demonstrated to be operating with no detectable emissions as indicated by an instrument reading of less than 500 ppm above background as measured by the methods specified in **Testing Requirement** condition **(3)**, and
  - (3) Is tested for compliance with **Compliance Demonstration Method** condition **f(2)** initially upon designation, annually, and at other times requested by the Division.
- g. If any pump is equipped with a closed vent system capable of capturing and transporting any leakage from the seal or seals to a process or to a fuel gas system or to a control device that complies with the requirements of 40 CFR 60.482-10, it is exempt from **Compliance Demonstration Method** condition **b** through **f**.
- h. Any pump that is designated, as described in **Specific Recordkeeping Requirement** condition **(4)(i)**, as an unsafe-to-monitor pump is exempt from the monitoring and inspection requirements of **Compliance Demonstration Method** conditions **b** and **e(4) – (6)** if:
  - (1) The owner or operator of the pump demonstrates that the pump is unsafe-to-monitor because monitoring personnel would be exposed to an immediate danger

Compliance Demonstration Method (Continued):

## SECTION D - SOURCE EMISSION LIMITATIONS AND TESTING REQUIREMENTS

as a consequence of complying with **Compliance Demonstration Method** condition **b**; and

(2) The owner or operator of the pump has a written plan that requires monitoring of the pump as frequently as practicable during safe-to-monitor times but not more frequently than the periodic monitoring schedule otherwise applicable, and repair of the equipment according to the procedures in **Compliance Demonstration Method** condition **d** if a leak is detected.

- i. Any pump that is located within the boundary of an unmanned plant site is exempt from the weekly visual inspection requirement of **Compliance Demonstration Method** conditions **b(2)** and **e(4)**, and the daily requirements of **Compliance Demonstration Method** condition **e(5)**, provided that each pump is visually inspected as often as practicable and at least monthly.

### Open-ended Valves or Lines: [40 CFR 60.482-6]

- j. (1) Each open-ended valve or line shall be equipped with a cap, blind flange, plug, or a second valve.  
(2) The cap, blind flange, plug, or second valve shall seal the open end at all times except during operations requiring process fluid flow through the open-ended valve or line.
- k. Each open-ended valve or line equipped with a second valve shall be operated in a manner such that the valve on the process fluid end is closed before the second valve is closed.
- l. When a double block-and-bleed system is being used, the bleed valve or line may remain open during operations that require venting the line between the block valves but shall comply with **Compliance Demonstration Method** condition **j** at all other times.
- m. Open-ended valves or lines in an emergency shutdown system which are designed to open automatically in the event of a process upset are exempt from the requirements of **Compliance Demonstration Method** conditions **j**, **k**, and **l**.
- n. Open-ended valves or lines containing materials which would autocatalytically polymerize or would present an explosion, serious overpressure, or other safety hazard if capped or equipped with a double block and bleed system as specified in **Compliance Demonstration Method** conditions **j**, **k**, and **l** are exempt from the requirements of those paragraphs.

### Valves – Gas/Vapor and Light Liquid Service: [40 CFR 60.482-7]

- o. Each valve shall be monitored monthly to detect leaks by the methods specified in **Testing Requirement** condition (2) and shall comply with **Compliance Demonstration Method** conditions **p – s**, except as provided in **Compliance Demonstration Method** conditions **t – v**, or as provided in 40 CFR 60.483-1 and 60.483-2.
- p. If an instrument reading of 10,000 ppm or greater is measured, a leak is detected.



## SECTION D - SOURCE EMISSION LIMITATIONS AND TESTING REQUIREMENTS

### Compliance Demonstration Method (Continued):

- q. (1) Any valve for which a leak is not detected for 2 successive months may be monitored the first month of every quarter, beginning with the next quarter, until a leak is detected.
  - (2) If a leak is detected, the valve shall be monitored monthly until a leak is not detected for 2 successive months.
- r. (1) When a leak is detected, it shall be repaired as soon as practicable, but no later than 15 calendar days after the leak is detected, except as provided in **Compliance Demonstration Method** conditions **aa – ee**.
  - (2) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.
- s. First attempts at repair include, but are not limited to, the following best practices where practicable:
  - (1) Tightening of bonnet bolts;
  - (2) Replacement of bonnet bolts;
  - (3) Tightening of packing gland nuts;
  - (4) Injection of lubricant into lubricated packing.
- t. Any valve that is designated, as described in **Specific Recordkeeping Requirement** condition **(3)(ii)**, for no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, is exempt from the requirements of **Compliance Demonstration Method** condition **o** if the valve:
  - (1) Has no external actuating mechanism in contact with the process fluid,
  - (2) Is operated with emissions less than 500 ppm above background as determined by the method specified in **Testing Requirement** condition **(3)**, and
  - (3) Is tested for compliance with **Compliance Demonstration Method** condition **t(2)** initially upon designation, annually, and at other times requested by the Administrator.
- u. Any valve that is designated, as described in **Specific Recordkeeping Requirement** condition **(4)(i)**, as an unsafe-to-monitor valve is exempt from the requirements of **Compliance Demonstration Method** condition **o** if:
  - (1) The owner or operator of the valve demonstrates that the valve is unsafe to monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with **Compliance Demonstration Method** condition **o**, and
  - (2) The owner or operator of the valve adheres to a written plan that requires monitoring of the valve as frequently as practicable during safe-to-monitor times.
- v. Any valve that is designated, as described in **Specific Recordkeeping Requirement** condition **(4)(ii)**, as a difficult-to-monitor valve is exempt from the requirements of **Compliance Demonstration Method** condition **o** if:
  - (1) The owner or operator of the valve demonstrates that the valve cannot be monitored without elevating the monitoring personnel more than 2 meters above a support surface.
  - (2) The process unit within which the valve is located either becomes an affected facility through 40 CFR 60.14 or 40 CFR 60.15 or the owner or operator

## SECTION D - SOURCE EMISSION LIMITATIONS AND TESTING REQUIREMENTS

### Compliance Demonstration Method (Continued):

- designates less than 3.0 percent of the total number of valves as difficult-to-monitor, and
- (3) The owner or operator of the valve follows a written plan that requires monitoring of the valve at least once per calendar quarter.

### Pumps & Valves in Heavy Liquid Service, Pressure Relief Devices in Light Liquid or Heavy Liquid Service, and Connectors: [40 CFR 60.482-8]

- w. If evidence of a potential leak is found by visual, audible, olfactory, or any other detection method at pumps and valves in heavy liquid service, pressure relief devices in light liquid or heavy liquid service, and connectors, the owner or operator shall follow either one of the following procedures:
  - (1) The owner or operator shall monitor the equipment within 5 days by the method specified in **Testing Requirement** condition **b** and shall comply with the requirements of **Compliance Demonstration Method** conditions **x – z**.
  - (2) The owner or operator shall eliminate the visual, audible, olfactory, or other indication of a potential leak.
- x. If an instrument reading of 10,000 ppm or greater is measured, a leak is detected.
- y. (1) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in **Compliance Demonstration Method** conditions **aa – ee**.
  - (2) The first attempt at repair shall be made no later than 5 calendar days after each leak is detected.
- z. First attempts at repair include, but are not limited to, the best practices described under **Compliance Demonstration Method** condition **s**.

### Delay of Repair: [40 CFR 60.482-9]

- aa. Delay of repair of equipment for which leaks have been detected will be allowed if repair within 15 days is technically infeasible without a process unit shutdown. Repair of this equipment shall occur before the end of the next process unit shutdown.
- bb. Delay of repair of equipment will be allowed for equipment which is isolated from the process and which does not remain in VOC service.
- cc. Delay of repair for valves will be allowed if:
  - (1) The owner or operator demonstrates that emissions of purged material resulting from immediate repair are greater than the fugitive emissions likely to result from delay of repair, and
  - (2) When repair procedures are effected, the purged material is collected and destroyed or recovered in a control device complying with 40 CFR 60.482-10.
- dd. Delay of repair for pumps will be allowed if:
  - (1) Repair requires the use of a dual mechanical seal system that includes a barrier fluid system, and
  - (2) Repair is completed as soon as practicable, but not later than 6 months after the leak was detected.

## SECTION D - SOURCE EMISSION LIMITATIONS AND TESTING REQUIREMENTS

### Compliance Demonstration Method (Continued):

ee. Delay of repair beyond a process unit shutdown will be allowed for a valve, if valve assembly replacement is necessary during the process unit shutdown, valve assembly supplies have been depleted, and valve assembly supplies had been sufficiently stocked before the supplies were depleted. Delay of repair beyond the next process unit shutdown will not be allowed unless the next process unit shutdown occurs sooner than 6 months after the first process unit shutdown.

### Compressors: [40 CFR 60.482-3]

ff. Each compressor shall be equipped with a seal system that includes a barrier fluid system and that prevents leakage of VOC to the atmosphere, except as provided in **Compliance Demonstration Methods mm and nn.**

gg. Each compressor seal system as required in **Compliance Demonstration Method** condition **ff** shall be:

- (1) Operated with the barrier fluid at a pressure that is greater than the compressor stuffing box pressure; or
- (2) Equipped with a barrier fluid degassing reservoir that is routed to a process or fuel gas system or connected by a closed vent system to a control device that complies with the requirements of 40 CFR 60.482-10; or
- (3) Equipped with a system that purges the barrier fluid into a process stream with zero VOC emissions to the atmosphere.

hh. The barrier fluid system shall be in heavy liquid service or shall not be in VOC service.

ii. Each barrier fluid system as described in **Compliance Demonstration Method** condition **ff** shall be equipped with a sensor that will detect failure of the seal system, barrier fluid system, or both.

jj. (1) Each sensor as required in **Compliance Demonstration Method** condition **ii** shall be checked daily or shall be equipped with an audible alarm

- (2) The permittee shall determine, based on design considerations and operating experience, a criterion that indicates failure of the seal system, the barrier fluid system, or both.

kk. If the sensor indicates failure of the seal system, the barrier system, or both based on the criterion determined under **Compliance Demonstration Method** condition **jj(2)**, a leak is detected.

ll. (1) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in **Compliance Demonstration Method** conditions **aa – ee**.

- (2) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.

mm. A compressor is exempt from the requirements of **Compliance Demonstration Method** conditions **ff and gg**, if it is equipped with a closed vent system to capture and transport leakage from the compressor drive shaft back to a process or fuel gas system or to a control device that complies with the requirements of 40 CFR 60.482-10, except as provided in **Compliance Demonstration Method nn**.

**SECTION D - SOURCE EMISSION LIMITATIONS AND TESTING REQUIREMENTS**Compliance Demonstration Method (Continued):

- nn. Any compressor that is designated, as described in **Specific Record Keeping Requirement** condition (3)(ii), for no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, is exempt from the requirements of **Compliance Demonstration Method** conditions ff through mm if the compressor:
- (1) Is demonstrated to be operating with no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as measured by the methods specified in Testing Requirement c; and
  - (2) Is tested for compliance with Compliance Demonstration Method nn.(1) initially upon designation, annually, and at other times requested by the Director.
- oo. An existing reciprocating compressor in a process unit which becomes an affected facility under provisions of 40 CFR 60.14 or 40 CFR 60.15 is exempt from **Compliance Demonstration Method** conditions ff, gg, hh, ii, jj, and mm, provided the permittee demonstrates that recasting the distance piece or replacing the compressor are the only options available to bring the compressor into compliance with the provisions of **Compliance Demonstration Method** conditions ff through jj and mm.

Pressure Relief Devices in Gas/Vapor Service: [40 CFR 60.482-4]

- pp. Except during pressure releases, each pressure relief device in gas/vapor service shall be operated with no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as determined by the methods specified in **Testing Requirement** condition (3).
- qq. (1) After each pressure release, the pressure relief device shall be returned to a condition of no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as soon as practicable, but no later than 5 calendar days after the pressure release, except as provided in **Compliance Demonstration Method** conditions aa – ee.
- (2) No later than 5 calendar days after the pressure release, the pressure relief device shall be monitored to confirm the conditions of no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, by the methods specified in **Testing Requirement** condition (3).
- rr. Any pressure relief device that is routed to a process or fuel gas system or equipped with a closed vent system capable of capturing and transporting leakage through the pressure relief device to a control device as described in 40 CFR 60.482-10 is exempted from the requirements of **Compliance Demonstration Method** conditions pp and qq.
- ss. (1) Any pressure relief device that is equipped with a rupture disk upstream of the pressure relief device is exempt from the requirements of **Compliance Demonstration Method** conditions pp and qq, provided the permittee complies with the requirements of **Compliance Demonstration Method** condition ss(2).
- (3) After each pressure release, a new rupture disk shall be installed upstream of the pressure relief device as soon as practicable, but no later than 5 calendar days

## SECTION D - SOURCE EMISSION LIMITATIONS AND TESTING REQUIREMENTS

### Compliance Demonstration Method (Continued):

after each pressure release, except as provided in **Compliance Demonstration Method** conditions **aa** – **ee**.

### Sampling Connection Systems: [40 CFR 60.482-5]

- tt. Each sampling connection system shall be equipped with a closed-purged, closed-loop, or closed-vent system. Gases displaced during filling of the sample container are not required to be collected or captured
- uu. Each closed-purge, closed-loop, or closed vent system as required in **Compliance Demonstration Method** condition **tt** shall comply with the requirements specified below:
  - (1) Return the purged process fluid directly to the process line; or
  - (2) Collect and recycle the purged process fluid directly to the process line; or
  - (3) Be designed and operated to capture and transport all the purged process fluid to a control device that complies with the requirements of 40 CFR 60.482-10; or
  - (4) Collect, store, and transport the purged process fluid to any of the following systems or facilities:
    - i. A waste management unit as defined in 40 CFR 63.111, if the waste management unit is subject to, and operated in compliance with the provisions of 40 CFR Part 63 Subpart G, applicable to Group 1 wastewater streams;
    - ii. A treatment, storage, or disposal facility subject to regulation under 40 CFR Part 262, 264, 265, or 266; or
    - iii. A facility permitted, licensed, or registered by a State to manage municipal or industrial solid waste, if the process fluids are not hazardous waste as defined in 40 CFR Part 261.
- vv. In situ sampling systems and sampling systems without purges are exempt from the requirements of **Compliance Demonstration Method** conditions **tt** and **uu**.

### Equipment in Vacuum Service

- ww. Equipment that is in vacuum service is excluded from the requirements of 40 CFR 60.482-2 to 60.482-10 if it is identified as required in 40 CFR 60.486(e)(5). [40 CFR 60.482-1(d)]

### Alternative Standards for Valves – Allowable Percentage of Valves Leaking: [40 CFR 60.483-1]

- xx. The permittee may elect to comply with an allowable percentage of valves leaking of equal to or less than 2.0 percent.
- yy. The following requirements shall be met if the permittee wishes to comply with an allowable percentage of valves leaking:
  - (1) The permittee must notify the Director that the permittee has elected to comply with the allowable percentage of valves leaking before implementing this alternative standard, as specified in **Specific Reporting Requirements**.
  - (2) A performance test as specified in **Compliance Demonstration Method** condition **zz** shall be conducted initially upon designation, annually, and at other times requires by the Director.

## SECTION D - SOURCE EMISSION LIMITATIONS AND TESTING REQUIREMENTS

### Compliance Demonstration Method (Continued):

- (3) If a valve leak is detected, it shall be repaired in accordance with **Compliance Demonstration Method** conditions **r** and **s**.
- zz. Performance tests shall be conducted in the following manner:
  - (1) All valves in gas/vapor and light liquid service within the affected facility shall be monitored within 1 week by the methods specified in Testing Requirement **b**.
  - (2) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected.
  - (3) The leak percentage shall be determined by dividing the number of valves for which leaks are detected by the number of valves in gas/vapor and light liquid service within the affected facility.
- aaa. A permittee who elects to comply with this alternative standard shall not have an affected facility with a leak percentage greater than 2.0 percent.

### Alternative Standards for Valves – Skip Period Leak Detection and Repair: [40 CFR 60.483-2]

- bbb.(1) The permittee may elect to comply with one of the alternative work practices specified in **Compliance Demonstration Method** conditions **ccc(2)** and **(3)**.
- (2) The permittee must notify the Director before implementing one of the alternative work practices, as specified in **Specific Reporting Requirements**.
- ccc.(1) The permittee shall comply initially with the requirements for valves in gas/vapor service and valves in light liquid service, as described in **Compliance Demonstration Method** conditions **o** through **v**.
- (2) After 2 consecutive quarterly leak detection periods with the percent of valves leaking equal to or less than 2.0, the permittee may begin to skip 1 of the quarterly leak detection periods for the valves in gas/vapor and light liquid service.
- (3) After 5 consecutive quarterly leak detection periods with the percent of valves leaking equal to or less than 2.0, the permittee may begin to skip 3 of the quarterly leak detection periods for the valves in gas/vapor and light liquid service.
- (4) If the percent of valves leaking is greater than 2.0, the permittee shall comply with the requirements as described in **Compliance Demonstration Method** conditions **o** through **v** but can again elect to use this section (**bbb** to **ccc**).
- (5) The percent of valves leaking shall be determined by dividing the sum of valves found leaking during current monitoring and valves for which repair has been delayed by the total number of valves subject to the requirements of 40 CFR 60.483-2.
- (6) The permittee must keep a record of the percent of valves found leaking during each leak detection period.

### b. **Testing Requirements:**

- (1) Pursuant to 401 KAR 50:045, Section 1, performance testing using the Reference Methods specified in 401 KAR 50:015 shall be conducted as required by the Division.
- (2) The owner or operator shall follow Method 21 to determine the presence of leaking sources. The instrument shall be calibrated before use each day of its use by the

## SECTION D - SOURCE EMISSION LIMITATIONS AND TESTING REQUIREMENTS

- b. Testing Requirements (Continued):  
procedures specified in Method 21. The following calibration gases shall be used: [40 CFR 60.485(b)]
- (i) Zero air (less than 10 ppm of hydrocarbon in air); and
  - (ii) A mixture of methane or n-hexane and air at a concentration of about, but less than, 10,000 ppm methane or n-hexane.
- (3) The owner or operator shall determine compliance with the no detectable emission standards in **Compliance Demonstration Method** conditions **f, t, nn, and pp** as follows: [40 CFR 60.485(c)]
- (i) The requirements of **Testing Requirements** condition (2) shall apply.
  - (ii) Method 21 shall be used to determine the background level. All potential leak interfaces shall be traversed as close to the interface as possible. The arithmetic difference between the maximum concentration indicated by the instrument and the background level is compared with 500 ppm for determining compliance.
- (4) The owner or operator shall test each piece of equipment unless he demonstrates that a process unit is not in VOC service, i.e., that the VOC content would never be reasonably expected to exceed 10 percent by weight. For purposes of this demonstration, the following methods and procedures shall be used: [40 CFR 60.485(d)]
- (i) Procedures that conform to the general methods in ASTM E260–73, 91, or 96, E168–67, 77, or 92, E169–63, 77, or 93 shall be used to determine the percent VOC content in the process fluid that is contained in or contacts a piece of equipment.
  - (ii) Organic compounds that are considered by the Division to have negligible photochemical reactivity may be excluded from the total quantity of organic compounds in determining the VOC content of the process fluid.
  - (iii) Engineering judgment may be used to estimate the VOC content, if a piece of equipment had not been shown previously to be in service. If the Division disagrees with the judgment, **Testing Requirements** conditions **4(i)** and **(ii)** shall be used to resolve the disagreement.
- (5) The owner or operator shall demonstrate that an equipment is in light liquid service by showing that all the following conditions apply: [40 CFR 60.485(e)]
- (i) The vapor pressure of one or more of the components is greater than 0.3 kPa at 20 °C (1.2 in. H<sub>2</sub>O at 68 °F). Standard reference texts or ASTM D2879–83, 96, or 97 shall be used to determine the vapor pressures.
  - (ii) The total concentration of the pure components having a vapor pressure greater than 0.3 kPa at 20 °C (1.2 in. H<sub>2</sub>O at 68 °F) is equal to or greater than 20 percent by weight.
  - (iii) The fluid is a liquid at operating conditions.
- (6) Samples used in conjunction with **Testing Requirements** conditions (4) and (5) shall be representative of the process fluid that is contained in or contacts the equipment. [40 CFR 60.485(f)]

## SECTION D - SOURCE EMISSION LIMITATIONS AND TESTING REQUIREMENTS

c. **Specific Monitoring Requirements:**

The **Specific Monitoring Requirements** are included above in the **Compliance Demonstration Method**.

d. **Specific Recordkeeping Requirements:**

(1) When each leak is detected as specified in the **Compliance Demonstration Method** conditions **c, p, x, kk, and bbb**, the following requirements apply: [40 CFR 60.486(b)]

- (i) A weatherproof and readily visible identification, marked with the equipment identification number, shall be attached to the leaking equipment.
- (ii) The identification on a valve may be removed after it has been monitored for 2 successive months as specified **Compliance Demonstration Method** condition **q**, above, and no leak has been detected during those 2 months.
- (iii) The identification on equipment except on a valve, may be removed after it has been repaired.

(2) When each leak is detected as specified in the **Compliance Demonstration Method** conditions **c, p, x, kk, and bbb**, the following information shall be recorded in a log: [40 CFR 60.486(c)]

- (i) The instrument and operator identification numbers and the equipment identification number.
- (ii) The date the leak was detected and the dates of each attempt to repair the leak.
- (iii) Repair methods applied in each attempt to repair the leak.
- (iv) "Above 10,000" if the maximum instrument reading measured by the methods specified in the **Testing Requirements**, above, after each repair attempt is equal to or greater than 10,000 ppm.
- (v) "Repair delayed" and the reason for the delay if a leak is not repaired within 15 calendar days after discovery of the leak.
- (vi) The signature of the owner or operator (or designate) whose decision it was that repair could not be effected without a process shutdown.
- (vii) The expected date of successful repair of the leak if a leak is not repaired within 15 days.
- (viii) Dates of process unit shutdowns that occur while the equipment is unrepaired.
- (ix) The date of successful repair of the leak.

(3) The following information pertaining to all equipment subject to the requirements in the **Compliance Demonstration Method**, above, shall be recorded in a log that is kept in a readily accessible location: [40 CFR 60.486(e)]

- (i) A list of identification numbers for the equipment.
- (ii) A. A list of identification numbers for equipment that are designated for no detectable emissions under the provisions in **Compliance Demonstration Method** conditions **f, t, and nn**.  
B. The designation of equipment as subject to the requirements of **Compliance Demonstration Method** conditions **f, t, and nn** shall be signed by the owner or operator.



## SECTION D - SOURCE EMISSION LIMITATIONS AND TESTING REQUIREMENTS

### d. Specific Recordkeeping Requirements (Continued):

- (iii) A list of equipment identification numbers for pressure relief devices required to comply with **Compliance Demonstration Method** conditions **pp - ss**.
- (iv) The dates of each compliance test as required in **Compliance Demonstration Method** conditions **f,t, nn, and qq**.
  - A. The background level measured during each compliance test.
  - B. The maximum instrument reading measured at the equipment during each compliance test.
- (v) A list of identification numbers for equipment in vacuum service.
- (4) The following information pertaining to all valves subject to the requirements of **Compliance Demonstration Method** conditions **u** and **v** and to all pumps subject to the requirements of **Compliance Demonstration Method** condition **h** shall be recorded in a log that is kept in a readily accessible location: [40 CFR 60.486(f)]
  - (i) A list of identification numbers for valves and pumps that are designated as unsafe-to-monitor, an explanation for each valve or pump stating why the valve or pump is unsafe-to-monitor, and the plan for monitoring each valve or pump.
  - (ii) A list of identification numbers for valves that are designated as difficult-to-monitor, an explanation for each valve stating why the valve is difficult-to-monitor, and the schedule for monitoring each valve.
- (5) The following information shall be recorded for valves complying with **Compliance Demonstration Method** conditions **bbb** and **ccc** (Alternative standards for valves – skip period leak detection and repair) [40 CFR 60.486(g)].
  - (i) A schedule of monitoring.
  - (ii) The percent of valves found leaking during each monitoring period.
- (6) The following information shall be recorded in a log that is kept in a readily accessible location: [40 CFR 60.486(h)]
  - (i) Design criterion required in **Compliance Demonstration Method** conditions **e(5)** and **jj(2)** and explanation of the design criterion; and
  - (ii) Any changes to this criterion and the reasons for the changes.
- (7) Information and data used to demonstrate that a piece of equipment is not in VOC service shall be recorded in a log that is kept in a readily accessible location. [40 CFR 60.486(j)]
- (8) The provisions of 40 CFR 60.7(b) and (d) do not apply to affected facilities subject to 40 CFR 60 Subpart VV. [40 CFR 60.486(k)]

### e. Specific Reporting Requirements:

- (1) All semiannual reports (See **Section F.5.** and **F.6.** of this permit) to the Division shall include the following information, summarized from the information in the **Specific Recordkeeping Requirements**: [40 CFR 60.487(c)]
  - (i) Process unit identification.
  - (ii) For each month during the semiannual reporting period,
    - A. Number of valves for which leaks were detected as described in **Compliance Demonstration Method** conditions **p** or **ccc**,
    - B. Number of valves for which leaks were not repaired as required in **Compliance Demonstration Method** condition **r(1)**,

## SECTION D - SOURCE EMISSION LIMITATIONS AND TESTING REQUIREMENTS

e. Specific Reporting Requirements (Continued):

- C. Number of pumps for which leaks were detected as described in **Compliance Demonstration Method** conditions **c** and **e(6)i**,
  - D. Number of pumps for which leaks were not repaired as required in **Compliance Demonstration Method** condition **d(1)** and **e(6)ii**,
  - E. Number of compressors for which leaks were not repaired as required in **Compliance Demonstration Method** condition **II**, and
  - F. The facts that explain each delay of repair and, where appropriate, why a process unit shutdown was technically infeasible.
- (iii) Dates of process unit shutdowns which occurred within the semiannual reporting period.
- (iv) Revisions to items reported according to 40 CFR 60.487(b) if changes have occurred since the initial report or subsequent revisions to the initial report.

6. **COGENERATION PLANT:**

a. **Operating Limitations:**

In order to preclude applicability of 401 KAR 59:016, New electric utility steam generating units, and 401 KAR 60:005, *40 CFR Part 60 standards of performance for new stationary sources*, incorporating by reference 40 CFR 60.40a to 60.49a (Subpart Da), “*Standards of Performance for Electric Utility Steam Generating Units for which Construction is Commenced After September 19, 1978*” to the HRSGs, the combined cycle gas turbine shall not supply for sale more than 25 MW electrical output to a utility power distribution system.

Compliance Demonstration Method:

See **Monitoring and Recordkeeping Requirements** below.

b. **Specific Monitoring Requirements:**

The owner or operator shall determine the Gross Calorific Value (GCV) of natural gas combusted in the turbine or each HRSG by quarterly sampling using ASTM D1826–88, ASTM D3588–91, ASTM D4891–89, GPA Standard 2172–86 “Calculation of Gross Heating Value, Relative Density and Compressibility Factor for Natural Gas Mixtures from Compositional Analysis”, or GPA Standard 2261–90 “Analysis for Natural Gas and Similar Gaseous Mixtures by Gas Chromatography”. The fuel sample shall be taken downstream of the sulfur injection. [401 KAR 52:020, Section 10]

c. **Specific Recordkeeping Requirements:**

The owner or operator shall maintain records of the electrical output supplied for sale to any utility power distribution system. [401 KAR 52:020, Section 10]

## **SECTION E - SOURCE CONTROL EQUIPMENT REQUIREMENTS**

Pursuant to 401 KAR 50:055, Section 2(5), at all times, including periods of startup, shutdown and malfunction, owners and operators shall, to the extent practicable, maintain and operate any affected facility including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Division which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source.

## **SECTION F – MONITORING, RECORDKEEPING, AND REPORTING REQUIREMENTS**

1. Pursuant to Section 1b-IV-1 of the *Cabinet Provisions and Procedures for Issuing Title V Permits* incorporated by reference in 401 KAR 52:020, Section 26, when continuing compliance is demonstrated by periodic testing or instrumental monitoring, the permittee shall compile records of required monitoring information that include:
  - a. Date, place as defined in this permit, and time of sampling or measurements;
  - b. Analyses performance dates;
  - c. Company or entity that performed analyses;
  - d. Analytical techniques or methods used;
  - e. Analyses results; and
  - f. Operating conditions during time of sampling or measurement.
2. Records of all required monitoring data and support information, including calibrations, maintenance records, and original strip chart recordings, and copies of all reports required by the Division for Air Quality, shall be retained by the permittee for a period of five years and shall be made available for inspection upon request by any duly authorized representative of the Division for Air Quality [Sections 1b-IV-2 and 1a-8 of the *Cabinet Provisions and Procedures for Issuing Title V Permits* incorporated by reference in 401 KAR 52:020, Section 26].
3. In accordance with the requirements of 401 KAR 52:020 Section 3(1)h the permittee shall allow authorized representatives of the Cabinet to perform the following during reasonable times:
  - a. Enter upon the premises to inspect any facility, equipment (including air pollution control equipment), practice, or operation;
  - b. To access and copy any records required by the permit;
  - c. Sample or monitor, at reasonable times, substances or parameters to assure compliance with the permit or any applicable requirements.Reasonable times are defined as during all hours of operation, during normal office hours; or during an emergency.
4. No person shall obstruct, hamper, or interfere with any Cabinet employee or authorized representative while in the process of carrying out official duties. Refusal of entry or access may constitute grounds for permit revocation and assessment of civil penalties.
5. Summary reports of any monitoring required by this permit shall be submitted to the Regional Office listed on the front of this permit at least every six (6) months during the life of this permit, unless otherwise stated in this permit. For emission units that were still under construction or which had not commenced operation at the end of the 6-month period covered by the report and are subject to monitoring requirements in this permit, the report shall indicate that no monitoring was performed during the previous six months because the emission unit was not in operation [Sections 1b-V-1 of the *Cabinet Provisions and Procedures for Issuing Title V Permits* incorporated by reference in 401 KAR 52:020, Section 26].

**SECTION F – MONITORING, RECORDKEEPING, AND REPORTING REQUIREMENTS (CONTINUED)**

6. The semi-annual reports are due by January 30th and July 30th of each year. All reports shall be certified by a responsible official pursuant to 401 KAR 52:020 Section 23. If continuous emission and opacity monitors are required by regulation or this permit, data shall be reported in accordance with the requirements of 401 KAR 59:005, General Provisions, Section 3(3). All deviations from permit requirements shall be clearly identified in the reports.
7. In accordance with the provisions of 401 KAR 50:055, Section 1 the owner or operator shall notify the Regional Office listed on the front of this permit concerning startups, shutdowns, or malfunctions as follows:
  - a. When emissions during any planned shutdowns and ensuing startups will exceed the standards, notification shall be made no later than three (3) days before the planned shutdown, or immediately following the decision to shut down, if the shutdown is due to events which could not have been foreseen three (3) days before the shutdown.
  - b. When emissions due to malfunctions, unplanned shutdowns and ensuing startups are or may be in excess of the standards, notification shall be made as promptly as possible by telephone (or other electronic media) and shall be submitted in writing upon request.
8. The owner or operator shall report emission related exceedances from permit requirements including those attributed to upset conditions (other than emission exceedances covered by Section F.7 above) to the Regional Office listed on the front of this permit within 30 days. Deviations from permit requirements, including those previously reported under F.7 above, shall be included in the semiannual report required by F.6 [Sections 1b-V, 3 and 4 of the *Cabinet Provisions and Procedures for Issuing Title V Permits* incorporated by reference in 401 KAR 52:020, Section 26].
9. Pursuant to 401 KAR 52:020, Permits, Section 21, the permittee shall annually certify compliance with the terms and conditions contained in this permit, by completing and returning a Compliance Certification Form (DEP 7007CC) (or an alternative approved by the regional office) to the Regional Office listed on the front of this permit and the U.S. EPA in accordance with the following requirements:
  - a. Identification of the term or condition;
  - b. Compliance status of each term or condition of the permit;
  - c. Whether compliance was continuous or intermittent;
  - d. The method used for determining the compliance status for the source, currently and over the reporting period.
  - e. For an emissions unit that was still under construction or which has not commenced operation at the end of the 12-month period covered by the annual compliance certification, the permittee shall indicate that the unit is under construction and that compliance with any applicable requirements will be demonstrated within the timeframes specified in the permit.
  - f. The certification shall be postmarked by January 30th of each year. Annual compliance certifications shall be mailed to the following addresses:

**SECTION F – MONITORING, RECORDKEEPING, AND REPORTING  
REQUIREMENTS (CONTINUED)**

Division for Air Quality  
Paducah Regional Office  
130 Eagle Nest Drive  
Paducah, KY 42003

U.S. EPA Region 4  
Air Enforcement Branch  
Atlanta Federal Center  
61 Forsyth St.  
Atlanta, GA 30303-8960

Division for Air Quality  
Central Files  
803 Schenkel Lane  
Frankfort, KY 40601

In accordance with 401 KAR 52:020, Section 22, the permittee shall provide the Division with all information necessary to determine its subject emissions within thirty (30) days of the date the KYEIS emission survey is mailed to the permittee.

**SECTION G – GENERAL PROVISIONS****1. General Compliance Requirements**

- a. The permittee shall comply with all conditions of this permit. Noncompliance shall be a violation of 401 KAR 52:020 Section 3(1)(b) and a violation of Federal Statute 42 USC 7401 through 7671q (the Clean Air Act). Noncompliance with this permit is grounds for enforcement action including but not limited to termination, revocation and reissuance, revision or denial of a permit [Section 1a-3 of the *Cabinet Provisions and Procedures for Issuing Title V Permits* incorporated by reference in 401 KAR 52:020 Section 26].
- b. The filing of a request by the permittee for any permit revision, revocation, reissuance, or termination, or of a notification of a planned change or anticipated noncompliance, shall not stay any permit condition [Section 1a-6 of the *Cabinet Provisions and Procedures for Issuing Title V Permits* incorporated by reference in 401 KAR 52:020, Section 26].
- c. This permit may be revised, revoked, reopened and reissued, or terminated for cause in accordance with 401 KAR 52:020, Section 19. The permit will be reopened for cause and revised accordingly under the following circumstances:
  - (1) If additional applicable requirements become applicable to the source and the remaining permit term is three (3) years or longer. In this case, the reopening shall be completed no later than eighteen (18) months after promulgation of the applicable requirement. A reopening shall not be required if compliance with the applicable requirement is not required until after the date on which the permit is due to expire, unless this permit or any of its terms and conditions have been extended pursuant to 401 KAR 52:020, Section 12;
  - (2) The Cabinet or the U. S. EPA determines that the permit must be revised or revoked to assure compliance with the applicable requirements;
  - (3) The Cabinet or the U. S. EPA determines that the permit contains a material mistake or that inaccurate statements were made in establishing the emissions standards or other terms or conditions of the permit;
  - (4) New requirements become applicable to a source subject to the Acid Rain Program.

Proceedings to reopen and reissue a permit shall follow the same procedures as apply to initial permit issuance and shall affect only those parts of the permit for which cause to reopen exists. Reopenings shall be made as expeditiously as practicable. Reopenings shall not be initiated before a notice of intent to reopen is provided to the source by the Division, at least thirty (30) days in advance of the date the permit is to be reopened, except that the Division may provide a shorter time period in the case of an emergency.

- d. The permittee shall furnish information upon request of the Cabinet to determine if cause exists for modifying, revoking and reissuing, or terminating the permit; or to determine compliance with the conditions of this permit [Sections 1a- 7 and 8 of the *Cabinet Provisions and Procedures for Issuing Title V Permits* incorporated by reference in 401 KAR 52:020, Section 26].
- e. Emission units described in this permit shall demonstrate compliance with applicable requirements if requested by the Division [401 KAR 52:020 Section 3(1)(c)].

**SECTION G – GENERAL PROVISIONS (CONTINUED)**

- f. The permittee, upon becoming aware that any relevant facts were omitted or incorrect information was submitted in the permit application, shall promptly submit such supplementary facts or corrected information to the permitting authority [401 KAR 52:020, Section 7(1)].
- g. Any condition or portion of this permit which becomes suspended or is ruled invalid as a result of any legal or other action shall not invalidate any other portion or condition of this permit [Section 1a-14 of the *Cabinet Provisions and Procedures for Issuing Title V Permits* incorporated by reference in 401 KAR 52:020, Section 26].
- h. The permittee shall not use as a defense in an enforcement action the contention that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance [Section 1a-4 of the *Cabinet Provisions and Procedures for Issuing Title V Permits* incorporated by reference in 401 KAR 52:020, Section 26].
- i. Except for requirements identified in this permit as state-origin requirements, all terms and conditions shall be enforceable by the United States Environmental Protection Agency and citizens. [Section 1a-15-b of the *Cabinet Provisions and Procedures for Issuing Title V Permits* incorporated by reference in 401 KAR 52:020, Section 26].
- j. This permit shall be subject to suspension if the permittee fails to pay all emissions fees within 90 days after the date of notice as specified in 401 KAR 50:038, Section 3(6) [Section 1a-10 of the *Cabinet Provisions and Procedures for Issuing Title V Permits* incorporated by reference in 401 KAR 52:020, Section 26].
- k. Nothing in this permit shall alter or affect the liability of the permittee for any violation of applicable requirements prior to or at the time of permit issuance [401 KAR 52:020, Section 11(3)(b)].
- l. This permit does not convey property rights or exclusive privileges [Section 1a-9 of the *Cabinet Provisions and Procedures for Issuing Title V Permits* incorporated by reference in 401 KAR 52:020, Section 26].
- m. Issuance of this permit does not relieve the permittee from the responsibility of obtaining any other permits, licenses, or approvals required by the Cabinet or any other federal, state, or local agency.
- n. Nothing in this permit shall alter or affect the authority of U.S. EPA to obtain information pursuant to Federal Statute 42 USC 7414, Inspections, monitoring, and entry [401 KAR 52:020, Section 11(3)(d)].
- o. Nothing in this permit shall alter or affect the authority of U.S. EPA to impose emergency orders pursuant to Federal Statute 42 USC 7603, Emergency orders [401 KAR 52:020, Section 11(3)(a)].



## **SECTION G – GENERAL PROVISIONS (CONTINUED)**

- p. This permit consolidates the authority of any previously issued PSD, NSR, or Synthetic Minor source preconstruction permit terms and conditions for various emission units and incorporates all requirements of those existing permits into one single permit for this source.
- q. Pursuant to 401 KAR 52:020, Section 11, a permit shield shall not protect the owner or operator from enforcement actions for violating an applicable requirement prior to or at the time of permit issuance. Compliance with the conditions of a permit shall be considered compliance with:
  - (1) Applicable requirements that are included and specifically identified in the permit and
  - (2) Non-applicable requirements expressly identified in this permit.

### **2. Permit Expiration and Reapplication Requirements**

- a. This permit shall remain in effect for a fixed term of five (5) years following the original date of issue. Permit expiration shall terminate the source's right to operate unless a timely and complete renewal application has been submitted to the Division at least six months prior to the expiration date of the permit. Upon a timely and complete submittal, the authorization to operate within the terms and conditions of this permit, including any permit shield, shall remain in effect beyond the expiration date, until the renewal permit is issued or denied by the Division [401 KAR 52:020, Section 12].
- b. The authority to operate granted shall cease to apply if the source fails to submit additional information requested by the Division after the completeness determination has been made on any application, by whatever deadline the Division sets [401 KAR 52:020 Section 8(2)].

### **3. Permit Revisions**

- a. A minor permit revision procedure may be used for permit revisions involving the use of economic incentive, marketable permit, emission trading, and other similar approaches, to the extent that these minor permit revision procedures are explicitly provided for in the SIP or in applicable requirements and meet the relevant requirements of 401 KAR 52:020, Section 14(2).
- b. This permit is not transferable by the permittee. Future owners and operators shall obtain a new permit from the Division for Air Quality. The new permit may be processed as an administrative amendment if no other change in this permit is necessary, and provided that a written agreement containing a specific date for transfer of permit responsibility coverage and liability between the current and new permittee has been submitted to the permitting authority within ten (10) days following the transfer.

### **4. Construction, Start-Up, and Initial Compliance Demonstration Requirements**

No construction authorized by this permit.

**SECTION G – GENERAL PROVISIONS (CONTINUED)****5. Testing Requirements**

- a. Pursuant to 401 KAR 50:045 Section 2, a source required to conduct a performance test shall submit a completed Compliance Test Protocol form, DEP form 6028, or a test protocol a source has developed for submission to other regulatory agencies, in a format approved by the cabinet, to the Division's Frankfort Central Office a minimum of sixty (60) days prior to the scheduled test date. Pursuant to 401 KAR 50:045, Section 7, the Division shall be notified of the actual test date at least Thirty (30) days prior to the test.
- b. Pursuant to 401 KAR 50:045 Section 5, in order to demonstrate that a source is capable of complying with a standard at all times, any required performance test shall be conducted under normal conditions that are representative of the source's operations and create the highest rate of emissions. If [When] the maximum production rate represents a source's highest emissions rate and a performance test is conducted at less than the maximum production rate, a source shall be limited to a production rate of no greater than 110 percent of the average production rate during the performance tests. If and when the facility is capable of operation at the rate specified in the application, the source may retest to demonstrate compliance at the new production rate. The Division for Air Quality may waive these requirements on a case-by-case basis if the source demonstrates to the Division's satisfaction that the source is in compliance with all applicable requirements.
- c. Results of performance test(s) required by the permit shall be submitted to the Division by the source or its representative within forty-five days or sooner if required by an applicable standard, after the completion of the fieldwork.

**6. Acid Rain Program Requirements**

- a. If an applicable requirement of Federal Statute 42 USC 7401 through 7671q (the Clean Air Act) is more stringent than an applicable requirement promulgated pursuant to Federal Statute 42 USC 7651 through 7651o (Title IV of the Act), both provisions shall apply, and both shall be state and federally enforceable.
- b. The permittee shall comply with all applicable requirements and conditions of the Acid Rain Permit and the Phase II permit application (including the Phase II NOx compliance plan and averaging plan, if applicable) incorporated into the Title V permit issued for this source. The source shall also comply with all requirements of any revised or future acid rain permit(s) issued to this source.

**7. Emergency Provisions**

- a. Pursuant to 401 KAR 52:020 Section 24(1), an emergency shall constitute an affirmative defense to an action brought for the noncompliance with the technology-based emission limitations if the permittee demonstrates through properly signed contemporaneous operating logs or relevant evidence that:
  - (1) An emergency occurred and the permittee can identify the cause of the emergency;

**SECTION G – GENERAL PROVISIONS (CONTINUED)**

- (2) The permitted facility was at the time being properly operated;
  - (3) During an emergency, the permittee took all reasonable steps to minimize levels of emissions that exceeded the emissions standards or other requirements in the permit; and
  - (4) Pursuant to 401 KAR 52:020, 401 KAR 50:055, and KRS 224.01-400, the permittee notified the Division as promptly as possible and submitted written notice of the emergency to the Division when emission limitations were exceeded due to an emergency. The notice shall include a description of the emergency, steps taken to mitigate emissions, and corrective actions taken.
  - (5) This requirement does not relieve the source of other local, state or federal notification requirements.
- b. Emergency conditions listed in General Condition G.7.a above are in addition to any emergency or upset provision(s) contained in an applicable requirement [401 KAR 52:020, Section 24(3)].
  - c. In an enforcement proceeding, the permittee seeking to establish the occurrence of an emergency shall have the burden of proof [401 KAR 52:020, Section 24(2)].

**8. Ozone Depleting Substances**

- a. The permittee shall comply with the standards for recycling and emissions reduction pursuant to 40 CFR 82, Subpart F, except as provided for Motor Vehicle Air Conditioners (MVACs) in Subpart B:
  - (1) Persons opening appliances for maintenance, service, repair, or disposal shall comply with the required practices contained in 40 CFR 82.156.
  - (2) Equipment used during the maintenance, service, repair, or disposal of appliances shall comply with the standards for recycling and recovery equipment contained in 40 CFR 82.158.
  - (3) Persons performing maintenance, service, repair, or disposal of appliances shall be certified by an approved technician certification program pursuant to 40 CFR 82.161.
  - (4) Persons disposing of small appliances, MVACs, and MVAC-like appliances (as defined at 40 CFR 82.152) shall comply with the recordkeeping requirements pursuant to 40 CFR 82.166
  - (5) Persons owning commercial or industrial process refrigeration equipment shall comply with the leak repair requirements pursuant to 40 CFR 82.156.
  - (6) Owners/operators of appliances normally containing 50 or more pounds of refrigerant shall keep records of refrigerant purchased and added to such appliances pursuant to 40 CFR 82.166.
- b. If the permittee performs service on motor (fleet) vehicle air conditioners containing ozone-depleting substances, the source shall comply with all applicable requirements as specified in 40 CFR 82, Subpart B, *Servicing of Motor Vehicle Air Conditioners*.

## **SECTION G – GENERAL PROVISIONS (CONTINUED)**

### 9. Risk Management Provisions

- a. The permittee shall comply with all applicable requirements of 401 KAR Chapter 68, Chemical Accident Prevention, which incorporates by reference 40 CFR Part 68, Risk Management Plan provisions. If required, the permittee shall comply with the Risk Management Program and submit a Risk Management Plan to:

RMP Reporting Center  
P.O. Box 1515  
Lanham-Seabrook, MD 20703-1515.

- b. If requested, submit additional relevant information to the Division or the U.S. EPA.

## **SECTION H – ALTERNATE OPERATING SCENARIOS**

None

**SECTION I – COMPLIANCE SCHEDULE**

None

**SECTION J - ACID RAIN**

None

## **SECTION K – NO<sub>x</sub> BUDGET**

- 1. Statement of Basis.** In accordance with KRS224.10-100, the Kentucky Environmental and Public Protection Cabinet issues this permit pursuant to 401 KAR 52:020, Title V permits; 401 KAR 51:160, NO<sub>x</sub> requirements for large utility and industrial boilers; and 40 CFR 97, Subpart C.
- 2. NO<sub>x</sub> Budget Permit Application, Form DEP 7007EE.** The NO<sub>x</sub> Budget Permit Application for these units was submitted to the Division and received on February 18, 2003. Requirements contained in that application are hereby incorporated into and made part of this NO<sub>x</sub> Budget Permit. Pursuant to 401 KAR 52:020, Section 3, the source shall operate in compliance with those requirements.
- 3. Comments, notes, justifications regarding permit decisions and changes made to the permit application forms during review process, and any additional requirements or conditions.** Affected units are D-1 (26MW Combustion Turbine – Unit C in the application), and D-3 and D-4 (310 mmBtu/hr Heat Recovery Steam Generators (HRSGs) / stand alone indirect heat exchangers – Units A and B in the application), due to the applicability of an electric generating unit used to generate 25 megawatts or more of electricity, some of which is offered for sale.
- 4. Summary of Actions.** The NO<sub>x</sub> Budget Permit is being issued as a part of the initial Title V permit for this source. Public, affected state, and U.S. EPA review will follow procedures specified in 401 KAR 52:100. [401 KAR 51:160]